SEQUENCE LISTING

<110> Homa, Fred
      Wathen, Michael
      Hopkins, Todd
      Thomsen, Darrell

<120> A Method for Treating Herpes Virus

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Ser Cys Asp Leu Pro Glu Ser His Leu Ser Asp Leu Ala Ser Arg Gly
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Asn Ile Thr Arg Thr Ile Tyr Asp Gly Gln Gln Ile Arg Val Phe Thr
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Arg Asp Tyr Leu Glu Ile Glu Val Gly Gly Arg Arg Leu Phe Phe Val
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Glu Leu  Ser Arg His Pro Arg  Ala Tyr Thr Asn Lys  Arg Leu Ala
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His Leu  Thr Val Tyr Tyr Lys  Leu Met Ala Arg Arg  Ala Gln Val
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Pro Ser  Ile Lys Asp Arg Ile  Pro Tyr Val Ile Val  Ala Gln Thr
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Arg Ser Leu Asp Glu Asp Ala Pro Ala Glu Gln Arg Thr Gly Val His
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Asp Gly Arg Leu Arg Arg Ala Pro Lys Val Tyr Cys Gly Gly Asp Glu
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Arg Asp Val Leu Arg Val Gly Pro Glu Gly Phe Trp Pro Arg Arg Leu
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Arg Leu Trp Gly Gly Ala Asp His Ala Pro Glu Gly Phe Asp Pro Thr
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Val Thr Val Phe His Val Tyr Asp Ile Leu Glu His Val Glu His Ala
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9

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His Arg Val Ala Val His Val Tyr Gly Thr Arg Gln Tyr Phe Tyr Met
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Asn Lys Ala Glu Val Asp Arg His Leu Gln Cys Arg Ala Pro Arg Asp
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Phe Arg Gly Ile Ser Ala Asp His Phe Glu Ala Glu Val Val Glu Arg
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Pro Ala Ile Arg Lys Tyr Glu Gly Gly Val Asp Ala Thr Thr Arg Phe
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Ile Leu Asp Asn Pro Gly Phe Val Thr Phe Gly Trp Tyr Arg Leu Lys
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Asp Leu Ser Thr Thr Ala Leu Glu His Ile Leu Leu Phe Ser Leu Gly
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Ser Cys Asp Leu Pro Glu Ser His Leu Ser Asp Leu Ala Ser Arg Gly
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Leu Ala Phe Met Thr Phe Val Lys Gln Tyr Gly Pro Glu Phe Val Thr
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Asn Ile Thr Arg Thr Ile Tyr Asp Gly Gln Gln Ile Arg Val Phe Thr
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Gln Gly Arg Phe Arg Gly Leu Asp Lys Glu Ala Pro Lys Arg Pro Ala
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Glu Val Ala Arg Glu Thr Gly Gly Arg His Val Gly Tyr Gln Gly Ala
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Arg Val Leu Asp Pro Thr Ser Gly Phe His Val Asp Pro Val Val Val
705   710   715   720

Phe Asp Phe Ala Ser Leu Tyr Pro Ser Ile Ile Gln Ala His Asn Leu
                725   730   735

Cys Phe Ser Thr Leu Ser Leu Arg Pro Glu Ala Val Ala His Leu Glu
            740   745   750

Ala Asp Arg Asp Tyr Leu Glu Ile Glu Val Gly Gly Arg Arg Leu Phe
            755   760   765

Phe Val Lys Ala His Val Arg Glu Ser Leu Leu Ser Ile Leu Leu Arg
        770   775   780

Asp Trp Leu Ala Met Arg Lys Gln Ile Arg Ser Arg Ile Pro Gln Ser
785   790   795   800

Pro Pro Glu Glu Ala Val Leu Leu Asp Lys Gln Gln Ala Ala Ile Lys
                805   810   815

11

Val Val Cys Asn Ser Val Tyr Gly Phe Thr Gly Ala Gln His Gly Leu
    820   825   830

Leu Pro Cys Leu His Val Ala Ala Thr Val Thr Thr Ile Gly Arg Glu
    835   840   845

Met Leu Leu Ala Thr Arg Ala Tyr Val His Ala Arg Trp Ala Glu Phe
    850   855   860

Asp Gln Leu Leu Ala Asp Phe Pro Glu Ala Ala Gly Met Arg Ala Pro
865   870   875   880

Gly Pro Tyr Ser Met Arg Ile Ile Tyr Gly Asp Thr Asp Ser Ile Phe
        885   890   895

Val Leu Cys Arg Gly Leu Thr Ala Ala Gly Leu Val Ala Met Gly Asp
     900   905   910

Lys Met Ala Ser His Ile Ser Arg Ala Leu Phe Leu Pro Pro Ile Lys
    915   920   925

Leu Glu Cys Glu Lys Thr Phe Thr Lys Leu Leu Leu Ile Ala Lys Lys
    930   935   940

Lys Tyr Ile Gly Val Ile Cys Gly Gly Lys Met Leu Ile Lys Gly Val
945   950   955   960

Asp Leu Val Arg Lys Asn Asn Cys Ala Phe Ile Asn Arg Thr Ser Arg
        965   970   975

Ala Leu Val Asp Leu Leu Phe Tyr Asp Asp Thr Val Ser Gly Ala Ala
        980   985   990

Ala Ala Leu Ala Glu Arg Pro Ala Glu Glu Trp Leu Ala Arg Pro Leu
    995   1000   1005

Pro Glu Gly Leu Gln Ala Phe Gly Ala Val Leu Val Asp Ala His
    1010   1015   1020

Arg Arg Ile Thr Asp Pro Glu Arg Asp Ile Gln Asp Phe Val Leu
    1025   1030   1035

Thr Ala Glu Leu Ser Arg His Pro Arg Ala Tyr Thr Asn Lys Arg
    1040   1045   1050

Leu Ala His Leu Thr Val Tyr Tyr Lys Leu Met Ala Arg Arg Ala
    1055   1060   1065

Gln Val Pro Ser Ile Lys Asp Arg Ile Pro Tyr Val Ile Val Ala
    1070   1075   1080

Gln Thr Arg Glu Val Glu Glu Thr Val Ala Arg Leu Ala Ala Leu
    1085   1090   1095

Arg Glu Leu Asp Ala Ala Ala Pro Gly Asp Glu Pro Ala Pro Pro
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Ala Ala Leu Pro Ser Pro Ala Lys Arg Pro Arg Glu Thr Pro Ser
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His Ala Asp Pro Pro Gly Gly Ala Ser Lys Pro Arg Lys Leu Leu

12

Val Ser Glu Leu Ala Glu Asp Pro Gly Tyr Ala Ile Ala Arg Gly
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Val Pro Leu Asn Thr Asp Tyr Tyr Phe Ser His Leu Leu Gly Ala
    1160   1165   1170

Ala Cys Val Thr Phe Lys Ala Leu Phe Gly Asn Asn Ala Lys Ile
    1175   1180   1185

Thr Glu Ser Leu Leu Lys Arg Phe Ile Pro Glu Thr Trp His Pro
    1190   1195   1200

Pro Asp Asp Val Ala Ala Arg Leu Arg Ala Ala Gly Phe Gly Pro
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Ala Gly Ala Gly Ala Thr Ala Glu Glu Thr Arg Arg Met Leu His
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Arg Ala Phe Asp Thr Leu Ala
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14

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Gly Arg Gly Pro Pro Pro Cys Leu Arg Gln Asn Phe Tyr Asn Pro Tyr
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Leu Ala Pro Val Gly Thr Gln Gln Lys Pro Thr Gly Pro Thr Gln Arg
    50                  55                  60

His Thr Tyr Tyr Ser Glu Cys Asp Glu Phe Arg Phe Ile Ala Pro Arg
65                  70                  75                  80

Val Leu Asp Glu Asp Ala Pro Pro Glu Lys Arg Ala Gly Val His Asp
                85                  90                  95

Gly His Leu Lys Arg Ala Pro Lys Val Tyr Cys Gly Gly Asp Glu Arg
            100                 105                 110

Asp Val Leu Arg Val Gly Ser Gly Gly Phe Trp Pro Arg Arg Ser Arg
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Leu Trp Gly Gly Val Asp His Ala Pro Ala Gly Phe Asn Pro Thr Val
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15
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Thr Val Phe His Val Tyr Asp Ile Leu Glu Asn Val Glu His Ala Tyr
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Gly Met Arg Ala Ala Gln Phe His Ala Arg Phe Met Asp Ala Ile Thr
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Pro Thr Gly Thr Val Ile Thr Leu Leu Gly Leu Thr Pro Glu Gly His
                    180                     185                     190

Arg Val Ala Val His Val Tyr Gly Thr Arg Gln Tyr Phe Tyr Met Asn
                    195                     200                     205

Lys Glu Glu Val Asp Arg His Leu Gln Cys Arg Ala Pro Arg Asp Leu
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Cys Glu Arg Met Ala Ala Ala Leu Arg Glu Ser Pro Gly Ala Ser Phe
225                     230                     235                     240

Arg Gly Ile Ser Ala Asp His Phe Glu Ala Glu Val Val Glu Arg Thr
                    245                     250                            255

Asp Val Tyr Tyr Tyr Glu Thr Arg Pro Ala Leu Phe Tyr Arg Val Tyr
                    260                     265                     270

Val Arg Ser Gly Arg Val Leu Ser Tyr Leu Cys Asp Asn Phe Cys Pro
          275                     280                     285

Ala Ile Lys Lys Tyr Glu Gly Gly Val Asp Ala Thr Thr Arg Phe Ile
          290                     295                     300

Leu Asp Asn Pro Gly Phe Val Thr Phe Gly Trp Tyr Arg Leu Lys Pro
305                     310                     315                     320

Gly Arg Asn Asn Thr Leu Ala Gln Pro Arg Ala Pro Met Ala Phe Gly
                    325                     330                     335

Thr Ser Ser Asp Val Glu Phe Asn Cys Thr Ala Asp Asn Leu Ala Ile
          340                     345                     350

Glu Gly Gly Met Ser Asp Leu Pro Ala Tyr Lys Leu Met Cys Phe Asp
          355                     360                     365

Ile Glu Cys Lys Ala Gly Gly Glu Asp Glu Leu Ala Phe Pro Val Ala
          370                     375                     380

Gly His Pro Glu Asp Leu Val Ile Gln Ile Ser Cys Leu Leu Tyr Asp
385                     390                     395                     400

Leu Ser Thr Thr Ala Leu Glu His Val Leu Leu Phe Ser Leu Gly Ser
                    405                     410                     415

Cys Asp Leu Pro Glu Ser His Leu Asn Glu Leu Ala Ala Arg Gly Leu
          420                     425                     430

Pro Thr Pro Val Val Leu Glu Phe Asp Ser Glu Phe Glu Met Leu Leu
          435                     440                     445

Ala Phe Met Thr Leu Val Lys Gln Tyr Gly Pro Glu Phe Val Thr Gly
          450                     455                     460

                                    16

Tyr Asn Ile Ile Asn Phe Asp Trp Pro Phe Leu Leu Ala Lys Leu Thr
465                     470             475                 480

Asp Ile Tyr Lys Val Pro Leu Asp Gly Tyr Gly Arg Met Asn Gly Arg
                485             490                 495

Gly Val Phe Arg Val Trp Asp Ile Gly Gln Ser His Phe Gln Lys Arg
                500             505                 510

Ser Lys Ile Lys Val Asn Gly Met Val Asn Ile Asp Met Tyr Gly Ile
            515             520             525

Ile Thr Asp Lys Ile Lys Leu Ser Ser Tyr Lys Leu Asn Ala Val Ala
        530             535             540

Glu Ala Val Leu Lys Asp Lys Lys Lys Asp Leu Ser Tyr Arg Asp Ile
545             550             555                 560

Pro Ala Tyr Tyr Ala Ala Gly Pro Ala Gln Arg Gly Val Ile Gly Glu
                565             570                 575

Tyr Cys Ile Gln Asp Ser Leu Leu Val Gly Gln Leu Phe Phe Lys Phe
            580             585             590

Leu Pro His Leu Glu Leu Ser Ala Val Ala Arg Leu Ala Gly Ile Asn
            595             600             605

Ile Thr Arg Thr Ile Tyr Asp Gly Gln Gln Ile Arg Val Phe Thr Cys
        610             615             620

Leu Leu Arg Leu Ala Asp Gln Lys Gly Phe Ile Leu Pro Asp Thr Gln
625             630             635                 640

Gly Arg Phe Arg Gly Ala Gly Gly Glu Ala Pro Lys Arg Pro Ala Ala
                645             650             655

Ala Arg Glu Asp Glu Glu Arg Pro Glu Glu Glu Gly Glu Asp Glu Asp
            660             665             670

Glu Arg Glu Glu Gly Gly Gly Glu Arg Glu Pro Glu Gly Ala Arg Glu
        675             680             685

Thr Ala Gly Arg His Val Gly Tyr Gln Gly Ala Arg Val Leu Asp Pro
    690             695             700

Thr Ser Gly Phe His Val Asn Pro Val Val Val Phe Asp Phe Ala Ser
705             710             715                 720

Leu Tyr Pro Ser Ile Ile Gln Ala His Asn Leu Cys Phe Ser Thr Leu
                725             730             735

Ser Leu Arg Ala Asp Ala Val Ala His Leu Glu Ala Gly Lys Asp Tyr
            740             745             750

Leu Glu Ile Glu Val Gly Gly Arg Arg Leu Phe Phe Val Lys Ala His
        755             760             765

Val Arg Glu Ser Leu Leu Ser Ile Leu Leu Arg Asp Trp Leu Ala Met
    770             775             780

Arg Lys Gln Ile Arg Ser Arg Ile Pro Gln Ser Ser Pro Glu Glu Ala
785             790             795                 800

17

Val Leu Leu Asp Lys Gln Gln Ala Ala Ile Lys Val Val Cys Asn Ser
                    805                 810                 815

Val Tyr Gly Phe Thr Gly Ala Gln His Gly Leu Leu Pro Cys Leu His
              820                 825                 830

Val Ala Ala Thr Val Thr Thr Ile Gly Arg Glu Met Leu Leu Ala Thr
          835                 840                 845

Arg Glu Tyr Val His Ala Arg Trp Ala Ala Phe Glu Gln Leu Leu Ala
    850                 855                 860

Asp Phe Pro Glu Ala Ala Asp Met Arg Ala Pro Gly Pro Tyr Ser Met
865                 870                 875                 880

Arg Ile Ile Tyr Gly Asp Thr Asp Ser Ile Phe Val Leu Cys Arg Gly
              885                 890                 895

Leu Thr Ala Ala Gly Leu Thr Ala Met Gly Asp Lys Met Ala Ser His
          900                 905                 910

Ile Ser Arg Ala Leu Phe Leu Pro Pro Ile Lys Leu Glu Cys Glu Lys
    915                 920                 925

Thr Phe Thr Lys Leu Leu Leu Ile Ala Lys Lys Lys Tyr Ile Gly Val
    930                 935                 940

Ile Tyr Gly Gly Lys Met Leu Ile Lys Gly Val Asp Leu Val Arg Lys
945                 950                 955                 960

Asn Asn Cys Ala Phe Ile Asn Arg Thr Ser Arg Ala Leu Val Asp Leu
              965                 970                 975

Leu Phe Tyr Asp Asp Thr Val Ser Gly Ala Ala Ala Ala Leu Ala Glu
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Arg Pro Ala Glu Glu Trp Leu Ala Arg Pro Leu Pro Glu Gly Leu Gln
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Ala Phe Gly Ala Val Leu Val Asp Ala His Arg Arg Ile Thr Asp
    1010                1015                1020

Pro Glu Arg Asp Ile Gln Asp Phe Val Leu Thr Ala Glu Leu Ser
    1025                1030                1035

Arg His Pro Arg Ala Tyr Thr Asn Lys Arg Leu Ala His Leu Thr
    1040                1045                1050

Val Tyr Tyr Lys Leu Met Ala Arg Arg Ala Gln Val Pro Ser Ile
    1055                1060                1065

Lys Asp Arg Ile Pro Tyr Val Ile Val Ala Gln Thr Arg Glu Val
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Glu Glu Thr Val Ala Arg Leu Ala Ala Leu Arg Glu Leu Asp Ala
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Ala Ala Pro Gly Asp Glu Pro Ala Pro Pro Ala Ala Leu Pro Ser
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Pro Ala Lys Arg Pro Arg Glu Thr Pro Ser His Ala Asp Pro Pro

Gly Gly Ala Ser Lys Pro Arg Lys Leu Leu Val Ser Glu Leu Ala
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Glu Asp Pro Ala Tyr Ala Ile Ala His Gly Val Ala Leu Asn Thr
    1145            1150            1155

Asp Tyr Tyr Phe Ser His Leu Leu Gly Ala Ala Cys Val Thr Phe
    1160            1165            1170

Lys Ala Leu Phe Gly Asn Asn Ala Lys Ile Thr Glu Ser Leu Leu
    1175            1180            1185

Lys Arg Phe Ile Pro Glu Val Trp His Pro Pro Asp Asp Val Ala
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Ala Arg Leu Arg Ala Ala Gly Phe Gly Ala Val Gly Ala Gly Ala
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Leu Ala
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20

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gacgtggccg cgcggctccg ggccgcaggg ttcggggcgg tgggtgccgg cgctacggcg    3660

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<213>   herpes simplex

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Met Phe Ser Gly Gly Gly Gly Pro Leu Ser Pro Gly Gly Lys Ser Ala
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Ala Arg Ala Ala Ser Gly Phe Phe Ala Pro Ala Gly Pro Arg Gly Ala
                20                  25                  30

Gly Arg Gly Pro Pro Pro Cys Leu Arg Gln Asn Phe Tyr Asn Pro Tyr
            35                  40                  45

Leu Ala Pro Val Gly Thr Gln Gln Lys Pro Thr Gly Pro Thr Gln Arg
        50                  55                  60

His Thr Tyr Tyr Ser Glu Cys Asp Glu Phe Arg Phe Ile Ala Pro Arg
65                  70                  75                  80

Val Leu Asp Glu Asp Ala Pro Pro Glu Lys Arg Ala Gly Val His Asp
                85                  90                  95

Gly His Leu Lys Arg Ala Pro Lys Val Tyr Cys Gly Gly Asp Glu Arg
            100                 105                 110

Asp Val Leu Arg Val Gly Ser Gly Gly Phe Trp Pro Arg Arg Ser Arg
```

21

Leu Trp Gly Gly Val Asp His Ala Pro Ala Gly Phe Asn Pro Thr Val
130   135   140

Thr Val Phe His Val Tyr Asp Ile Leu Glu Asn Val Glu His Ala Tyr
145   150   155   160

Gly Met Arg Ala Ala Gln Phe His Ala Arg Phe Met Asp Ala Ile Thr
                165   170   175

Pro Thr Gly Thr Val Ile Thr Leu Leu Gly Leu Thr Pro Glu Gly His
                180   185   190

Arg Val Ala Val His Val Tyr Gly Thr Arg Gln Tyr Phe Tyr Met Asn
        195   200   205

Lys Glu Glu Val Asp Arg His Leu Gln Cys Arg Ala Pro Arg Asp Leu
    210   215   220

Cys Glu Arg Met Ala Ala Ala Leu Arg Glu Ser Pro Gly Ala Ser Phe
225   230   235   240

Arg Gly Ile Ser Ala Asp His Phe Glu Ala Glu Val Val Glu Arg Thr
            245   250   255

Asp Val Tyr Tyr Tyr Glu Thr Arg Pro Ala Leu Phe Tyr Arg Val Tyr
            260   265   270

Val Arg Ser Gly Arg Val Leu Ser Tyr Leu Cys Asp Asn Phe Cys Pro
        275   280   285

Ala Ile Lys Lys Tyr Glu Gly Gly Val Asp Ala Thr Thr Arg Phe Ile
        290   295   300

Leu Asp Asn Pro Gly Phe Val Thr Phe Gly Trp Tyr Arg Leu Lys Pro
305   310   315   320

Gly Arg Asn Asn Thr Leu Ala Gln Pro Arg Ala Pro Met Ala Phe Gly
                325   330   335

Thr Ser Ser Asp Val Glu Phe Asn Cys Thr Ala Asp Asn Leu Ala Ile
            340   345   350

Glu Gly Gly Met Ser Asp Leu Pro Ala Tyr Lys Leu Met Cys Phe Asp
        355   360   365

Ile Glu Cys Lys Ala Gly Gly Glu Asp Glu Leu Ala Phe Pro Val Ala
    370   375   380

Gly His Pro Glu Asp Leu Val Ile Gln Ile Ser Cys Leu Leu Tyr Asp
385   390   395   400

Leu Ser Thr Thr Ala Leu Glu His Val Leu Leu Phe Ser Leu Gly Ser
            405   410   415

Cys Asp Leu Pro Glu Ser His Leu Asn Glu Leu Ala Ala Arg Gly Leu
        420   425   430

Pro Thr Pro Val Val Leu Glu Phe Asp Ser Glu Phe Glu Met Leu Leu
    435   440   445

```
Ala Phe Met Thr Leu Val Lys Gln Tyr Gly Pro Glu Phe Val Thr Gly
    450                 455             460

Tyr Asn Ile Ile Asn Phe Asp Trp Pro Phe Leu Leu Ala Lys Leu Thr
465                 470             475                 480

Asp Ile Tyr Lys Val Pro Leu Asp Gly Tyr Gly Arg Met Asn Gly Arg
            485             490                 495

Gly Val Phe Arg Val Trp Asp Ile Gly Gln Ser His Phe Gln Lys Arg
            500             505             510

Ser Lys Ile Lys Val Asn Gly Met Val Asn Ile Asp Met Tyr Gly Ile
        515             520             525

Ile Thr Asp Lys Ile Lys Leu Ser Ser Tyr Lys Leu Asn Ala Val Ala
        530             535             540

Glu Ala Val Leu Lys Asp Lys Lys Lys Asp Leu Ser Tyr Arg Asp Ile
545                 550             555                 560

Pro Ala Tyr Tyr Ala Ala Gly Pro Ala Gln Arg Gly Val Ile Gly Glu
            565             570                 575

Tyr Cys Ile Gln Asp Ser Leu Leu Val Gly Gln Leu Phe Phe Lys Phe
            580             585             590

Leu Pro His Leu Glu Leu Ser Ala Val Ala Arg Leu Ala Gly Ile Asn
        595             600             605

Ile Thr Arg Thr Ile Tyr Asp Gly Gln Gln Ile Arg Val Phe Thr Cys
        610             615             620

Leu Leu Arg Leu Ala Asp Gln Lys Gly Phe Ile Leu Pro Asp Thr Gln
625                 630             635                 640

Gly Arg Phe Arg Gly Gly Gly Glu Ala Pro Lys Arg Pro Ala Ala
            645             650                 655

Ala Arg Glu Asp Glu Glu Arg Pro Glu Glu Glu Gly Glu Asp Glu Asp
            660             665             670

Glu Arg Glu Glu Gly Gly Gly Glu Arg Glu Pro Glu Gly Ala Arg Glu
        675             680             685

Thr Ala Gly Arg His Val Gly Tyr Gln Gly Ala Arg Val Leu Asp Pro
        690             695             700

Thr Ser Gly Phe His Val Asn Pro Val Val Val Phe Asp Phe Ala Ser
705             710             715                 720

Leu Tyr Pro Ser Ile Ile Gln Ala His Asn Leu Cys Phe Ser Thr Leu
            725             730             735

Ser Leu Arg Ala Asp Ala Val Ala His Leu Glu Ala Gly Lys Asp Tyr
            740             745             750

Leu Glu Ile Glu Val Gly Gly Arg Arg Leu Phe Phe Val Lys Ala His
        755             760             765

Val Arg Glu Ser Leu Leu Ser Ile Leu Leu Arg Asp Trp Leu Ala Met
    770             775             780
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23

Arg Lys Gln Ile Arg Ser Arg Ile Pro Gln Ser Ser Pro Glu Glu Ala
785   790   795   800

Val Leu Leu Asp Lys Gln Gln Ala Ala Ile Lys Val Val Cys Asn Ser
                805   810   815

Val Tyr Gly Phe Thr Gly Ala Gln His Gly Leu Leu Pro Cys Leu His
            820   825   830

Val Ala Ala Thr Val Thr Thr Ile Gly Arg Glu Met Leu Leu Ala Thr
            835   840   845

Arg Glu Tyr Val His Ala Arg Trp Ala Ala Phe Glu Gln Leu Leu Ala
        850   855   860

Asp Phe Pro Glu Ala Ala Asp Met Arg Ala Pro Gly Pro Tyr Ser Met
865   870   875   880

Arg Ile Ile Tyr Gly Asp Thr Asp Ser Ile Phe Val Leu Cys Arg Gly
                885   890   895

Leu Thr Ala Ala Gly Leu Thr Ala Val Gly Asp Lys Met Ala Ser His
            900   905   910

Ile Ser Arg Ala Leu Phe Leu Ser Pro Ile Lys Leu Glu Cys Glu Lys
        915   920   925

Thr Phe Thr Lys Leu Leu Leu Ile Ala Lys Lys Lys Tyr Ile Gly Val
    930   935   940

Ile Tyr Gly Gly Lys Met Leu Ile Lys Gly Val Asp Leu Val Arg Lys
945   950   955   960

Asn Asn Cys Ala Phe Ile Asn Arg Thr Ser Arg Ala Leu Val Asp Leu
            965   970   975

Leu Phe Tyr Asp Asp Thr Val Ser Gly Ala Ala Ala Ala Leu Ala Glu
            980   985   990

Arg Pro Ala Glu Glu Trp Leu Ala Arg Pro Leu Pro Glu Gly Leu Gln
        995   1000   1005

Ala Phe Gly Ala Val Leu Val Asp Ala His Arg Arg Ile Thr Asp
    1010   1015   1020

Pro Glu Arg Asp Ile Gln Asp Phe Val Leu Thr Ala Glu Leu Ser
    1025   1030   1035

Arg His Pro Arg Ala Tyr Thr Asn Lys Arg Leu Ala His Leu Thr
    1040   1045   1050

Val Tyr Tyr Lys Leu Met Ala Arg Arg Ala Gln Val Pro Ser Ile
    1055   1060   1065

Lys Asp Arg Ile Pro Tyr Val Ile Val Ala Gln Thr Arg Glu Val
    1070   1075   1080

Glu Glu Thr Val Ala Arg Leu Ala Ala Leu Arg Glu Leu Asp Ala
    1085   1090   1095

Ala Ala Pro Gly Asp Glu Pro Ala Pro Pro Ala Ala Leu Pro Ser

24

```
        1100              1105                    1110
Pro Ala  Lys Arg Pro Arg Glu  Thr Pro Leu His Ala  Asp Pro Pro
        1115              1120                    1125

Gly Gly  Ala Ser Lys Pro Arg  Lys Leu Leu Val Ser  Glu Leu Ala
        1130              1135                    1140

Glu Asp  Pro Ala Tyr Ala Ile  Ala His Gly Val Ala  Leu Asn Thr
        1145              1150                    1155

Asp Tyr  Tyr Phe Ser His Leu  Leu Gly Ala Ala Cys  Val Thr Phe
        1160              1165                    1170

Lys Ala  Leu Phe Gly Asn Asn  Ala Lys Ile Thr Glu  Ser Leu Leu
        1175              1180                    1185

Lys Arg  Phe Ile Pro Glu Val  Trp His Pro Pro Asp  Asp Val Ala
        1190              1195                    1200

Ala Arg  Leu Arg Ala Ala Gly  Phe Gly Ala Val Gly  Ala Gly Ala
        1205              1210                    1215

Thr Ala  Glu Glu Thr Arg Arg  Met Leu His Arg Ala  Phe Asp Thr
        1220              1225                    1230

Leu Ala
        1235

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cgcgccccca aggtgtactg cggggggggac gagcgcgacg tcctccgcgt cgggtcgggc    360

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gtcatcacgc tcctgggcct gactccggaa ggccaccggg tggccgttca cgtttacggc    600

acgcggcagt actttttacat gaacaaggag gaggttgaca ggcacctaca atgccgcgcc    660

ccacgagatc tctgcgagcg catggccgcg ccctgcgcg agtccccggg cgcgtcgttc    720

cgcggcatct ccgcggacca cttcgaggcg gaggtggtgg agcgcaccga cgtgtactac    780

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25

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gtcgagttta actgtacggc ggacaacctg gccatcgagg ggggcatgag cgacctaccg   1080

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tttccggtgg ccgggcaccc ggaggacctg gtcatccaga tatcctgtct gctctacgac   1200

ctgtccacca ccgccctgga gcacgtcctc ctgttttcgc tcggttcctg cgacctcccc   1260

gaatcccacc tgaacgagct ggcggccagg ggcctgccca cgcccgtggt tctggaattc   1320

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gtcgcgcgct tggcgggtat taacatcacc cgcaccatct acgacggcca gcagatccgc   1860

gtctttacgt gcctgctgcg cctggccgac cagaagggct ttattctgcc ggacacccag   1920

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cagctcctgg ccgatttccc ggaggcggcc gacatgcgcg ccccgggggcc ctattccatg   2640

cgcatcatct acggggacac ggactccata tttgtgctgt gccgcggcct cacggccgcc   2700
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26

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gggctgacgg ccgtgggcga caagatggcg agccacatct cgcgcgcgct gtttctgccc      2760

cccatcaaac tcgagtgcga aagacgttc accaagctgc tgctgatcgc caagaaaaag       2820

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aacaactgcg cgtttatcaa ccgcacctcc agggccctgg tcgacctgct gttttacgac      2940

gataccgtat ccggagcggc cgccgcgtta gccgagcgcc ccgcagagga gtggctggcg      3000

cgacccctgc ccgagggact gcaggcgttc ggggccgtcc tcgtagacgc ccatcggcgc      3060

atcaccgacc cggagaggga catccaggac tttgttctca ccgccgaact gagcagacac      3120

ccgcgcgcgt acaccaacaa gcgcctggcc cacctgacgg tgtattacaa gctcatggcc      3180

cgccgcgcgc aggtcccgtc catcaaggac cggatcccgt acgtgatcgt ggcccagacc      3240

cgcgaggtag aggagacggt cgcgcggctg ccgccctcc gcgagctaga cgccgccgcc       3300

ccagggggacg agcccgcccc ccccgcggcc ctgccctccc cggccaagcg ccccccgggag    3360

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gccaagatca ccgagagtct gttaaaaagg tttattcccg aagtgtggca ccccccggac      3600

gacgtggccg cgcggctccg gaccgcaggg ttcggggcgg tgggtgccgg cgctacggcg      3660
                                                                        3708
gaggaaactc gtcgaatgtt gcatagagcc tttgatactc tagcatga
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Met Phe Ser Gly Gly Gly Gly Pro Leu Ser Pro Gly Gly Lys Ser Ala
1               5                  10                  15

Ala Arg Ala Ala Ser Gly Phe Phe Ala Pro Ala Gly Pro Arg Gly Ala
                20                  25                  30

Gly Arg Gly Pro Pro Pro Cys Leu Arg Gln Asn Phe Tyr Asn Pro Tyr
            35                  40                  45

Leu Ala Pro Val Gly Thr Gln Gln Lys Pro Thr Gly Pro Thr Gln Arg
        50                  55                  60

His Thr Tyr Tyr Ser Glu Cys Asp Glu Phe Arg Phe Ile Ala Pro Arg
65                  70                  75                  80

Val Leu Asp Glu Asp Ala Pro Pro Glu Lys Arg Ala Gly Val His Asp
                    85                  90                  95

Gly His Leu Lys Arg Ala Pro Lys Val Tyr Cys Gly Gly Asp Glu Arg
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27

Asp Val Leu Arg Val Gly Ser Gly Gly Phe Trp Pro Arg Arg Ser Arg
    115   120   125

Leu Trp Gly Gly Val Asp His Ala Pro Ala Gly Phe Asn Pro Thr Val
    130   135   140

Thr Val Phe His Val Tyr Asp Ile Leu Glu Asn Val Glu His Ala Tyr
145   150   155   160

Gly Met Arg Ala Ala Gln Phe His Ala Arg Phe Met Asp Ala Ile Thr
          165   170   175

Pro Thr Gly Thr Val Ile Thr Leu Leu Gly Leu Thr Pro Glu Gly His
          180   185   190

Arg Val Ala Val His Val Tyr Gly Thr Arg Gln Tyr Phe Tyr Met Asn
          195   200   205

Lys Glu Glu Val Asp Arg His Leu Gln Cys Arg Ala Pro Arg Asp Leu
    210   215   220

Cys Glu Arg Met Ala Ala Ala Leu Arg Glu Ser Pro Gly Ala Ser Phe
225   230   235   240

Arg Gly Ile Ser Ala Asp His Phe Glu Ala Glu Val Val Glu Arg Thr
          245   250   255

Asp Val Tyr Tyr Tyr Glu Thr Arg Pro Ala Leu Phe Tyr Arg Val Tyr
          260   265   270

Val Arg Ser Gly Arg Val Leu Ser Tyr Leu Cys Asp Asn Phe Cys Pro
          275   280   285

Ala Ile Lys Lys Tyr Glu Gly Gly Val Asp Ala Thr Thr Arg Phe Ile
    290   295   300

Leu Asp Asn Pro Gly Phe Val Thr Phe Gly Trp Tyr Arg Leu Lys Pro
305   310   315   320

Gly Arg Asn Asn Thr Leu Ala Gln Pro Arg Ala Pro Met Ala Phe Gly
          325   330   335

Thr Ser Ser Asp Val Glu Phe Asn Cys Thr Ala Asp Asn Leu Ala Ile
          340   345   350

Glu Gly Gly Met Ser Asp Leu Pro Ala Tyr Lys Leu Met Cys Phe Asp
          355   360   365

Ile Glu Cys Lys Ala Gly Gly Glu Asp Glu Leu Ala Phe Pro Val Ala
    370   375   380

Gly His Pro Glu Asp Leu Val Ile Gln Ile Ser Cys Leu Leu Tyr Asp
385   390   395   400

Leu Ser Thr Thr Ala Leu Glu His Val Leu Leu Phe Ser Leu Gly Ser
          405   410   415

Cys Asp Leu Pro Glu Ser His Leu Asn Glu Leu Ala Ala Arg Gly Leu
          420   425   430

28

Pro Thr Pro Val Val Leu Glu Phe Asp Ser Glu Phe Glu Met Leu Leu
    435   440   445

Ala Phe Met Thr Leu Val Lys Gln Tyr Gly Pro Glu Phe Val Thr Gly
    450   455   460

Tyr Asn Ile Ile Asn Phe Asp Trp Pro Phe Leu Leu Ala Lys Leu Thr
465   470   475   480.

Asp Ile Tyr Lys Val Pro Leu Asp Gly Tyr Gly Arg Met Asn Gly Arg
                485   490   495

Gly Val Phe Arg Val Trp Asp Ile Gly Gln Ser His Phe Gln Lys Arg
            500   505   510

Ser Lys Ile Lys Val Asn Gly Met Val Asn Ile Asp Met Tyr Gly Ile
        515   520   525

Ile Thr Asp Lys Ile Lys Leu Ser Ser Tyr Lys Leu Asn Ala Val Ala
    530   535   540

Glu Ala Val Leu Lys Asp Lys Lys Lys Asp Leu Ser Tyr Arg Asp Ile
545   550   555   560

Pro Thr Tyr Tyr Ala Ala Gly Pro Ala Gln Arg Gly Val Ile Gly Glu
            565   570   575

Tyr Cys Ile Gln Asp Ser Leu Leu Val Gly Gln Leu Phe Phe Lys Phe
        580   585   590

Leu Pro His Leu Glu Leu Ser Ala Val Ala Arg Leu Ala Gly Ile Asn
        595   600   605

Ile Thr Arg Thr Ile Tyr Asp Gly Gln Gln Ile Arg Val Phe Thr Cys
    610   615   620

Leu Leu Arg Leu Ala Asp Gln Lys Gly Phe Ile Leu Pro Asp Thr Gln
625   630   635   640

Gly Arg Phe Arg Gly Ala Gly Gly Glu Ala Pro Lys Arg Pro Ala Ala
            645   650   655

Ala Arg Glu Asp Glu Glu Arg Pro Glu Glu Glu Gly Glu Asp Glu Asn
        660   665   670

Glu Arg Glu Glu Gly Gly Gly Glu Arg Glu Pro Glu Gly Ala Arg Glu
        675   680   685

Thr Ala Gly Arg His Val Gly Tyr Gln Gly Ala Arg Val Leu Asp Pro
    690   695   700

Thr Ser Gly Phe His Val Asn Pro Val Val Val Phe Asp Phe Ala Ser
705   710   715   720

Leu Tyr Pro Ser Ile Ile Gln Ala His Asn Leu Cys Phe Ser Thr Leu
                725   730   735

Ser Leu Arg Ala Asp Ala Val Ala His Leu Glu Ala Gly Lys Asp Tyr
            740   745   750

Leu Glu Ile Glu Val Gly Gly Arg Arg Leu Phe Phe Val Lys Ala His
        755   760   765

29

Val Arg Glu Ser Leu Leu Ser Ile Leu Leu Arg Asp Trp Leu Ala Met
770   775   780

Arg Lys Gln Ile Arg Ser Arg Ile Pro Gln Ser Ser Pro Glu Glu Ala
785   790   795   800

Val Leu Leu Asp Lys Gln Gln Ala Ala Ile Lys Val Val Cys Asn Ser
                805   810   815

Val Tyr Gly Phe Thr Gly Ala Gln His Gly Leu Leu Pro Cys Leu His
            820   825   830

Val Ala Ala Thr Val Thr Thr Ile Gly Arg Glu Met Leu Leu Ala Thr
        835   840   845

Arg Glu Tyr Val His Ala Arg Trp Ala Ala Phe Glu Gln Leu Leu Ala
    850   855   860

Asp Phe Pro Glu Ala Ala Asp Met Arg Ala Pro Gly Pro Tyr Ser Met
865   870   875   880

Arg Ile Ile Tyr Gly Asp Thr Asp Ser Ile Phe Val Leu Cys Arg Gly
            885   890   895

Leu Thr Ala Ala Gly Leu Thr Ala Val Gly Asp Lys Met Ala Ser His
        900   905   910

Ile Ser Arg Ala Leu Phe Leu Pro Pro Ile Lys Leu Glu Cys Glu Lys
    915   920   925

Thr Phe Thr Lys Leu Leu Leu Ile Ala Lys Lys Lys Tyr Ile Gly Val
    930   935   940

Ile Tyr Gly Gly Lys Met Leu Ile Lys Gly Val Asp Leu Val Arg Lys
945   950   955   960

Asn Asn Cys Ala Phe Ile Asn Arg Thr Ser Arg Ala Leu Val Asp Leu
            965   970   975

Leu Phe Tyr Asp Asp Thr Val Ser Gly Ala Ala Ala Ala Leu Ala Glu
            980   985   990

Arg Pro Ala Glu Glu Trp Leu Ala Arg Pro Leu Pro Glu Gly Leu Gln
    995   1000   1005

Ala Phe Gly Ala Val Leu Val Asp Ala His Arg Arg Ile Thr Asp
    1010   1015   1020

Pro Glu Arg Asp Ile Gln Asp Phe Val Leu Thr Ala Glu Leu Ser
    1025   1030   1035

Arg His Pro Arg Ala Tyr Thr Asn Lys Arg Leu Ala His Leu Thr
    1040   1045   1050

Val Tyr Tyr Lys Leu Met Ala Arg Arg Ala Gln Val Pro Ser Ile
    1055   1060   1065

Lys Asp Arg Ile Pro Tyr Val Ile Val Ala Gln Thr Arg Glu Val
    1070   1075   1080

Glu Glu Thr Val Ala Arg Leu Ala Ala Leu Arg Glu Leu Asp Ala

30

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            1085                1090                  1095

Ala Ala  Pro Gly Asp Glu Pro  Ala Pro Pro Ala Ala  Leu Pro Ser
    1100                1105                1110

Pro Ala  Lys Arg Pro Arg Glu  Thr Pro Ser Pro Ala  Asp Pro Pro
    1115                1120                1125

Gly Gly  Ala Ser Lys Pro Arg  Lys Leu Leu Val Ser  Glu Leu Ala
    1130                1135                1140

Glu Asp  Pro Ala Tyr Ala Ile  Ala His Gly Val Ala  Leu Asn Thr
    1145                1150                1155

Asp Tyr  Tyr Phe Ser His Leu  Leu Gly Ala Ala Cys  Val Thr Phe
    1160                1165                1170

Lys Ala  Leu Phe Gly Asn Asn  Ala Lys Ile Thr Glu  Ser Leu Leu
    1175                1180                1185

Lys Arg  Phe Ile Pro Glu Val  Trp His Pro Pro Asp  Asp Val Ala
    1190                1195                1200

Ala Arg  Leu Arg Thr Ala Gly  Phe Gly Ala Val Gly  Ala Gly Ala
    1205                1210                1215

Thr Ala  Glu Glu Thr Arg Arg  Met Leu His Arg Ala  Phe Asp Thr
    1220                1225                1230

Leu Ala
    1235
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<213>  herpes simplex

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tttttgcaga tcgtgccgcg aggtgtcatg ttcgacggtc agacgggggtt gatcaagcat   180

aagacgggac ggctgcctct catgttctat cgagagatta aacatttgtt gagtcatgac   240

atggtttggc cgtgtccttg gcgcgagacc ctggtgggtc gcgtggtggg acctattcgt   300

tttcacacct acgatcagac ggacgccgtg ctcttcttcg actcgcccga aaacgtgtcg   360

ccgcgctatc gtcagcatct ggtgccttcg gggaacgtgt tgcgtttctt cggggccaca   420

gaacacggct acagtatctg cgtcaacgtt ttcgggcagc gcagctactt ttactgtgag   480

tacagcgaca ccgataggct gcgtgaggtc attgccagcg tgggcgaact agtgcccgaa   540

ccgcggacgc catacgccgt gtctgtcacg ccggccacca gacctccat ctatgggtac    600

gggacgcgac ccgtgcccga tttgcagtgt gtgtctatca gcaactggac catggccaga   660

aaaatcggcg agtatctgct ggagcagggt tttcccgtgt acgaggtccg tgtggatccg   720
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gatatcgagt gcatgagcgg cgagggtggt tttccctgcg ccgagaagtc cgatgacatt    960

gtcattcaga tctcgtgcgt gtgctacgag acggggggaa acaccgccgt ggatcagggg   1020

atcccaaacg ggaacgatgg tcggggctgc acttcggagg gtgtgatctt tgggcactcg   1080

ggtcttcatc tctttacgat cggcacctgc gggcaggtgg gcccagacgt ggacgtctac   1140

gagttccctt ccgaatacga gctgctgctg ggctttatgc ttttctttca acggtacgcg   1200

ccggcctttg tgaccggtta caacatcaac tcttttgact tgaagtacat cctcacgcgt   1260

ctcgagtacc tgtataaggt ggactcgcag cgcttctgca agttgcctac ggcgcagggc   1320

ggccgtttct ttttacacag ccccgccgtg ggttttaagc ggcagtacgc cgccgctttt   1380

ccctcggctt ctcacaacaa tccggccagc acggccgcca ccaaggtgta tattgcgggt   1440

tcggtggtta tcgacatgta ccctgtatgc atggccaaga ctaactcgcc caactataag   1500

ctcaacacta tggccgagct ttacctgcgg caacgcaagg atgacctgtc ttacaaggac   1560

atcccgcgtt gtttcgtggc taatgccgag ggccgcgccc aggtaggccg ttactgtctg   1620

caggacgccg tattggtgcg cgatctgttc aacaccatta attttcacta cgaggccggg   1680

gccatcgcgc ggctggctaa aattccgttg cggcgtgtca tctttgacgg acagcagatc   1740

cgtatctaca cctcgctgct ggacgagtgc gcctgccgcg attttatcct gcccaaccac   1800

tacagcaaag gtacgacggt gcccgaaacg aatagcgttg ctgtgtcacc taacgctgct   1860

atcatctcta ccgccgctgt gcccggcgac gcgggttctg tggcggctat gtttcagatg   1920

tcgccgccct tgcaatctgc gccgtccagt caggacggcg tttcacccgg ctccggcagt   1980

aacagtagta gcagcgtcgg cgttttcagc gtcggctccg gcagtagtgg cggcgtcggc   2040

gtttccaacg acaatcacgg cgccggcggt actgcggcgg tttcgtacca gggcgccacg   2100

gtgtttgagc ccgaggtggg ttactacaac gaccccgtgg ccgtgttcga ctttgccagc   2160

ctctaccctt ccatcatcat ggcccacaac ctctgctact ccaccctgct ggtgccgggt   2220

ggcgagtacc ctgtggaccc cgccgacgta tacagcgtca cgctagagaa cggcgtgacc   2280

caccgctttg tgcgtgcttc ggtgcgcgtc tcggtgctct cggaactgct caacaagtgg   2340

gtttcgcagc ggcgtgccgt gcgcgaatgc atgcgcgagt gtcaagaccc tgtgcgccgt   2400

atgctgctcg acaaggaaca gatggcgctc aaagtaacgt gcaacgcttt ctacggtttt   2460

accggcgcgc tgaacggtat gatgccgtgt ctgcccatcg ccgccagcat cacgcgcatc   2520

ggtcgcgaca tgctagagcg cacggcgcgg ttcatcaaag acaacttttc agagccgtgt   2580
```

32

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tttttgcaca attttttaa tcaggaagac tatgtagtgg gaacgcggga gggggattcg    2640

gaggagagca gcgcgttacc ggaggggctc gaaacatcgt cagggggctc gaacgaacgg    2700

cgggtggagg cgcgggtcat ctacggggac acggacagcg tgtttgtccg cttcgtggc    2760

ctgacgccgc aggctctggt ggcgcgtggg cccagcctgg cgcactacgt gacggcctgt    2820

cttttgtgg agcccgtcaa gctggagttt gaaaaggtct cgtctctct tatgatgatc    2880

tgcaagaaac gttacatcgg caaagtggag ggcgcctcgg gtctgagcat gaagggcgtg    2940

gatctggtgc gcaagacggc ctgcgagttc gtcaagggcg tcacgcgtga cgtcctctcg    3000

ctgctctttg aggatcgcga ggtctcggaa gcagccgtgc gcctgtcgcg cctctcactc    3060

gatgaagtca gaagtacgg cgtgccacgc ggtttctggc gtatcttacg ccgcttggtg    3120

caggcccgcg acgatctgta cctgcaccgt gtgcgtgtcg aggacctggt gctttcgtcg    3180

gtgctctcta aggacatctc gctgtaccgt caatctaacc tgccgcacat tgccgtcatt    3240

aagcgattgg cggcccgttc tgaggagcta ccctcggtcg gggatcgggt cttttacgtt    3300

ctgacggcgc ccggtgtccg gacggcgccg cagggttcct ccgacaacgg tgattctgta    3360

accgccggcg tggtttcccg gtcggacgcg attgatggca cggacgacga cgctgacggc    3420

ggcgggggtag aggagagcaa caggagagga ggagagccgg caaagaagag ggcgcggaaa    3480

ccaccgtcgg ccgtgtgcaa ctacgaggta gccgaagatc cgagctacgt gcgcgagcac    3540

ggcgtgccca ttcacgccga caagtacttt gagcaggttc tcaaggctgt aactaacgtg    3600

ctgtcgcccg tctttcccgg cggcgaaacc gcgcgcaagg acaagttttt gcacatggtg    3660

ctgccgcggc gcttgcactt ggagccggct tttctgccgt acagtgtcaa ggcgcacgaa    3720

                                                                      3729
tgctgttga
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<210> 12
<211> 1242
<212> PRT
<213> herpes simplex

<400> 12

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Met Phe Phe Asn Pro Tyr Leu Ser Gly Gly Val Thr Gly Gly Ala Val
1               5                   10                  15

Ala Gly Gly Arg Arg Gln Arg Ser Gln Pro Gly Ser Ala Gln Gly Ser
            20                  25                  30

Gly Lys Arg Pro Pro Gln Lys Gln Phe Leu Gln Ile Val Pro Arg Gly
        35                  40                  45

Val Met Phe Asp Gly Gln Thr Gly Leu Ile Lys His Lys Thr Gly Arg
    50                  55                  60

Leu Pro Leu Met Phe Tyr Arg Glu Ile Lys His Leu Leu Ser His Asp
65                  70                  75                  80
```

33
```

Met Val Trp Pro Cys Pro Trp Arg Glu Thr Leu Val Gly Arg Val Val
                85   90   95

Gly Pro Ile Arg Phe His Thr Tyr Asp Gln Thr Asp Ala Val Leu Phe
            100   105   110

Phe Asp Ser Pro Glu Asn Val Ser Pro Arg Tyr Arg Gln His Leu Val
            115   120   125

Pro Ser Gly Asn Val Leu Arg Phe Phe Gly Ala Thr Glu His Gly Tyr
        130   135   140

Ser Ile Cys Val Asn Val Phe Gly Gln Arg Ser Tyr Phe Tyr Cys Glu
145   150   155   160

Tyr Ser Asp Thr Asp Arg Leu Arg Glu Val Ile Ala Ser Val Gly Glu
                165   170   175

Leu Val Pro Glu Pro Arg Thr Pro Tyr Ala Val Ser Val Thr Pro Ala
            180   185   190

Thr Lys Thr Ser Ile Tyr Gly Tyr Gly Thr Arg Pro Val Pro Asp Leu
            195   200   205

Gln Cys Val Ser Ile Ser Asn Trp Thr Met Ala Arg Lys Ile Gly Glu
    210   215   220

Tyr Leu Leu Glu Gln Gly Phe Pro Val Tyr Glu Val Arg Val Asp Pro
225   230   235   240

Leu Thr Arg Leu Val Ile Asp Arg Arg Ile Thr Thr Phe Gly Trp Cys
                245   250   255

Ser Val Asn Arg Tyr Asp Trp Arg Gln Gln Gly Arg Ala Ser Thr Cys
            260   265   270

Asp Ile Glu Val Asp Cys Asp Val Ser Asp Leu Val Ala Val Pro Asp
            275   280   285

Asp Ser Ser Trp Pro Arg Tyr Arg Cys Leu Ser Phe Asp Ile Glu Cys
            290   295   300

Met Ser Gly Glu Gly Gly Phe Pro Cys Ala Glu Lys Ser Asp Asp Ile
305   310   315   320

Val Ile Gln Ile Ser Cys Val Cys Tyr Glu Thr Gly Gly Asn Thr Ala
                325   330   335

Val Asp Gln Gly Ile Pro Asn Gly Asn Asp Gly Arg Gly Cys Thr Ser
            340   345   350

Glu Gly Val Ile Phe Gly His Ser Gly Leu His Leu Phe Thr Ile Gly
        355   360   365

Thr Cys Gly Gln Val Gly Pro Asp Val Asp Val Tyr Glu Phe Pro Ser
    370   375   380

Glu Tyr Glu Leu Leu Leu Gly Phe Met Leu Phe Phe Gln Arg Tyr Ala
385   390   395   400

Pro Ala Phe Val Thr Gly Tyr Asn Ile Asn Ser Phe Asp Leu Lys Tyr

34

Ile Leu Thr Arg Leu Glu Tyr Leu Tyr Lys Val Asp Ser Gln Arg Phe
420   425   430

Cys Lys Leu Pro Thr Ala Gln Gly Gly Arg Phe Phe Leu His Ser Pro
435   440   445

Ala Val Gly Phe Lys Arg Gln Tyr Ala Ala Ala Phe Pro Ser Ala Ser
450   455   460

His Asn Asn Pro Ala Ser Thr Ala Ala Thr Lys Val Tyr Ile Ala Gly
465   470   475   480

Ser Val Val Ile Asp Met Tyr Pro Val Cys Met Ala Lys Thr Asn Ser
485   490   495

Pro Asn Tyr Lys Leu Asn Thr Met Ala Glu Leu Tyr Leu Arg Gln Arg
500   505   510

Lys Asp Asp Leu Ser Tyr Lys Asp Ile Pro Arg Cys Phe Val Ala Asn
515   520   525

Ala Glu Gly Arg Ala Gln Val Gly Arg Tyr Cys Leu Gln Asp Ala Val
530   535   540

Leu Val Arg Asp Leu Phe Asn Thr Ile Asn Phe His Tyr Glu Ala Gly
545   550   555   560

Ala Ile Ala Arg Leu Ala Lys Ile Pro Leu Arg Arg Val Ile Phe Asp
565   570   575

Gly Gln Gln Ile Arg Ile Tyr Thr Ser Leu Leu Asp Glu Cys Ala Cys
580   585   590

Arg Asp Phe Ile Leu Pro Asn His Tyr Ser Lys Gly Thr Thr Val Pro
595   600   605

Glu Thr Asn Ser Val Ala Val Ser Pro Asn Ala Ala Ile Ile Ser Thr
610   615   620

Ala Ala Val Pro Gly Asp Ala Gly Ser Val Ala Ala Met Phe Gln Met
625   630   635   640

Ser Pro Pro Leu Gln Ser Ala Pro Ser Ser Gln Asp Gly Val Ser Pro
645   650   655

Gly Ser Gly Ser Asn Ser Ser Ser Ser Val Gly Val Phe Ser Val Gly
660   665   670

Ser Gly Ser Ser Gly Gly Val Gly Val Ser Asn Asp Asn His Gly Ala
675   680   685

Gly Gly Thr Ala Ala Val Ser Tyr Gln Gly Ala Thr Val Phe Glu Pro
690   695   700

Glu Val Gly Tyr Tyr Asn Asp Pro Val Ala Val Phe Asp Phe Ala Ser
705   710   715   720

Leu Tyr Pro Ser Ile Ile Met Ala His Asn Leu Cys Tyr Ser Thr Leu
725   730   735

Leu Val Pro Gly Gly Glu Tyr Pro Val Asp Pro Ala Asp Val Tyr Ser
740 745 750

Val Thr Leu Glu Asn Gly Val Thr His Arg Phe Val Arg Ala Ser Val
755 760 765

Arg Val Ser Val Leu Ser Glu Leu Leu Asn Lys Trp Val Ser Gln Arg
770 775 780

Arg Ala Val Arg Glu Cys Met Arg Glu Cys Gln Asp Pro Val Arg Arg
785 790 795 800

Met Leu Leu Asp Lys Glu Gln Met Ala Leu Lys Val Thr Cys Asn Ala
805 810 815

Phe Tyr Gly Phe Thr Gly Ala Leu Asn Gly Met Met Pro Cys Leu Pro
820 825 830

Ile Ala Ala Ser Ile Thr Arg Ile Gly Arg Asp Met Leu Glu Arg Thr
835 840 845

Ala Arg Phe Ile Lys Asp Asn Phe Ser Glu Pro Cys Phe Leu His Asn
850 855 860

Phe Phe Asn Gln Glu Asp Tyr Val Val Gly Thr Arg Glu Gly Asp Ser
865 870 875 880

Glu Glu Ser Ser Ala Leu Pro Glu Gly Leu Glu Thr Ser Ser Gly Gly
885 890 895

Ser Asn Glu Arg Arg Val Glu Ala Arg Val Ile Tyr Gly Asp Thr Asp
900 905 910

Ser Val Phe Val Arg Phe Arg Gly Leu Thr Pro Gln Ala Leu Val Ala
915 920 925

Arg Gly Pro Ser Leu Ala His Tyr Val Thr Ala Cys Leu Phe Val Glu
930 935 940

Pro Val Lys Leu Glu Phe Glu Lys Val Phe Val Ser Leu Met Met Ile
945 950 955 960

Cys Lys Lys Arg Tyr Ile Gly Lys Val Glu Gly Ala Ser Gly Leu Ser
965 970 975

Met Lys Gly Val Asp Leu Val Arg Lys Thr Ala Cys Glu Phe Val Lys
980 985 990

Gly Val Thr Arg Asp Val Leu Ser Leu Leu Phe Glu Asp Arg Glu Val
995 1000 1005

Ser Glu Ala Ala Val Arg Leu Ser Arg Leu Ser Leu Asp Glu Val
1010 1015 1020

Lys Lys Tyr Gly Val Pro Arg Gly Phe Trp Arg Ile Leu Arg Arg
1025 1030 1035

Leu Val Gln Ala Arg Asp Asp Leu Tyr Leu His Arg Val Arg Val
1040 1045 1050

Glu Asp Leu Val Leu Ser Ser Val Leu Ser Lys Asp Ile Ser Leu
1055 1060 1065

36

Tyr Arg Gln Ser Asn Leu Pro His Ile Ala Val Ile Lys Arg Leu
    1070   1075   1080

Ala Ala Arg Ser Glu Glu Leu Pro Ser Val Gly Asp Arg Val Phe
    1085   1090   1095

Tyr Val Leu Thr Ala Pro Gly Val Arg Thr Ala Pro Gln Gly Ser
    1100   1105   1110

Ser Asp Asn Gly Asp Ser Val Thr Ala Gly Val Val Ser Arg Ser
    1115   1120   1125

Asp Ala Ile Asp Gly Thr Asp Asp Asp Ala Asp Gly Gly Gly Val
    1130   1135   1140

Glu Glu Ser Asn Arg Arg Gly Gly Glu Pro Ala Lys Lys Arg Ala
    1145   1150   1155

Arg Lys Pro Pro Ser Ala Val Cys Asn Tyr Glu Val Ala Glu Asp
    1160   1165   1170

Pro Ser Tyr Val Arg Glu His Gly Val Pro Ile His Ala Asp Lys
    1175   1180   1185

Tyr Phe Glu Gln Val Leu Lys Ala Val Thr Asn Val Leu Ser Pro
    1190   1195   1200

Val Phe Pro Gly Gly Glu Thr Ala Arg Lys Asp Lys Phe Leu His
    1205   1210   1215

Met Val Leu Pro Arg Arg Leu His Leu Glu Pro Ala Phe Leu Pro
    1220   1225   1230

Tyr Ser Val Lys Ala His Glu Cys Cys
    1235   1240

<210> 13
<211> 1242
<212> PRT
<213> herpes simplex

<400> 13

Met Phe Phe Asn Pro Tyr Leu Ser Gly Gly Val Thr Gly Gly Ala Val
1   5   10   15

Ala Gly Gly Arg Arg Gln Arg Ser Gln Pro Gly Ser Ala Gln Gly Ser
        20   25   30

Gly Lys Arg Pro Pro Gln Lys Gln Phe Leu Gln Ile Val Pro Arg Gly
        35   40   45

Val Met Phe Asp Gly Gln Thr Gly Leu Ile Lys His Lys Thr Gly Arg
        50   55   60

Leu Pro Leu Met Phe Tyr Arg Glu Ile Lys His Leu Leu Ser His Asp
65   70   75   80

Met Val Trp Pro Cys Pro Trp Arg Glu Thr Leu Val Gly Arg Val Val
                85   90   95

37

```
Gly Pro Ile Arg Phe His Thr Tyr Asp Gln Thr Asp Ala Val Leu Phe
        100                 105             110

Phe Asp Ser Pro Glu Asn Val Ser Pro Arg Tyr Arg Gln His Leu Val
        115             120             125

Pro Ser Gly Asn Val Leu Arg Phe Phe Gly Ala Thr Glu His Gly Tyr
        130             135             140

Ser Ile Cys Val Asn Val Phe Gly Gln Arg Ser Tyr Phe Tyr Cys Glu
145             150             155             160

Tyr Ser Asp Thr Asp Arg Leu Arg Glu Val Ile Ala Ser Val Gly Glu
            165             170             175

Leu Val Pro Glu Pro Arg Thr Pro Tyr Ala Val Ser Val Thr Pro Ala
        180             185             190

Thr Lys Thr Ser Ile Tyr Gly Tyr Gly Thr Arg Pro Val Pro Asp Leu
        195             200             205

Gln Cys Val Ser Ile Ser Asn Trp Thr Met Ala Arg Lys Ile Gly Glu
    210             215             220

Tyr Leu Leu Glu Gln Gly Phe Pro Val Tyr Glu Val Arg Val Asp Pro
225             230             235             240

Leu Thr Arg Leu Val Ile Asp Arg Arg Ile Thr Thr Phe Gly Trp Cys
            245             250             255

Ser Val Asn Arg Tyr Asp Trp Arg Gln Gln Gly Arg Ala Ser Thr Cys
        260             265             270

Asp Ile Glu Val Asp Cys Asp Val Ser Asp Leu Val Ala Val Pro Asp
    275             280             285

Asp Ser Ser Trp Pro Arg Tyr Arg Cys Leu Ser Phe Asp Ile Glu Cys
    290             295             300

Met Ser Gly Glu Gly Gly Phe Pro Cys Ala Glu Lys Ser Asp Asp Ile
305             310             315             320

Val Ile Gln Ile Ser Cys Val Cys Tyr Glu Thr Gly Gly Asn Thr Ala
            325             330             335

Val Asp Gln Gly Ile Pro Asn Gly Asn Asp Gly Arg Gly Cys Thr Ser
        340             345             350

Glu Gly Val Ile Phe Gly His Ser Gly Leu His Leu Phe Thr Ile Gly
        355             360             365

Thr Cys Gly Gln Val Gly Pro Asp Val Asp Val Tyr Glu Phe Pro Ser
    370             375             380

Glu Tyr Glu Leu Leu Leu Gly Phe Met Leu Phe Phe Gln Arg Tyr Ala
385             390             395             400

Pro Ala Phe Val Thr Gly Tyr Asn Ile Asn Ser Phe Asp Leu Lys Tyr
            405             410             415

Ile Leu Thr Arg Leu Glu Tyr Leu Tyr Lys Val Asp Ser Gln Arg Phe
        420             425             430
```

38

Cys Lys Leu Pro Thr Ala Gln Gly Gly Arg Phe Phe Leu His Ser Pro
        435   440   445

Ala Val Gly Phe Lys Arg Gln Tyr Ala Ala Ala Phe Pro Ser Ala Ser
        450   455   460

His Asn Asn Pro Ala Ser Thr Ala Ala Thr Lys Val Tyr Ile Ala Gly
465   470   475   480

Ser Val Val Ile Asp Met Tyr Pro Val Cys Met Ala Lys Thr Asn Ser
            485   490   495

Pro Asn Tyr Lys Leu Asn Thr Met Ala Glu Leu Tyr Leu Arg Gln Arg
        500   505   510

Lys Asp Asp Leu Ser Tyr Lys Asp Ile Pro Arg Cys Phe Val Ala Asn
        515   520   525

Ala Glu Gly Arg Ala Gln Val Gly Arg Tyr Cys Leu Gln Asp Ala Val
        530   535   540

Leu Val Arg Asp Leu Phe Asn Thr Ile Asn Phe His Tyr Glu Ala Gly
545   550   555   560

Ala Ile Ala Arg Leu Ala Lys Ile Pro Leu Arg Arg Val Ile Phe Asp
            565   570   575

Gly Gln Gln Ile Arg Ile Tyr Thr Ser Leu Leu Asp Glu Cys Ala Cys
        580   585   590

Arg Asp Phe Ile Leu Pro Asn His Tyr Ser Lys Gly Thr Thr Val Pro
        595   600   605

Glu Thr Asn Ser Val Ala Val Ser Pro Asn Ala Ala Ile Ile Ser Thr
        610   615   620

Ala Ala Val Pro Gly Asp Ala Gly Ser Val Ala Ala Met Phe Gln Met
625   630   635   640

Ser Pro Pro Leu Gln Ser Ala Pro Ser Ser Gln Asp Gly Val Ser Pro
            645   650   655

Gly Ser Gly Ser Asn Ser Ser Ser Ser Val Gly Val Phe Ser Val Gly
        660   665   670

Ser Gly Ser Ser Gly Gly Val Gly Val Ser Asn Asp Asn His Gly Ala
        675   680   685

Gly Gly Thr Ala Ala Val Ser Tyr Gln Gly Ala Thr Val Phe Glu Pro
        690   695   700

Glu Val Gly Tyr Tyr Asn Asp Pro Val Ala Val Phe Asp Phe Ala Ser
705   710   715   720

Leu Tyr Pro Ser Ile Ile Met Ala His Asn Leu Cys Tyr Ser Thr Leu
            725   730   735

Leu Val Pro Gly Gly Glu Tyr Pro Val Asp Pro Ala Asp Val Tyr Ser
        740   745   750

Val Thr Leu Glu Asn Gly Val Thr His Arg Phe Val Arg Ala Ser Val

Arg Val Ser Val Leu Ser Glu Leu Leu Asn Lys Trp Val Ser Gln Arg
770 775 780

Arg Ala Val Arg Glu Cys Met Arg Glu Cys Gln Asp Pro Val Arg Arg
785 790 795 800

Met Leu Leu Asp Lys Glu Gln Met Ala Leu Lys Val Thr Cys Asn Ala
805 810 815

Phe Tyr Gly Phe Thr Gly Val Val Asn Gly Met Met Pro Cys Leu Pro
820 825 830

Ile Ala Ala Ser Ile Thr Arg Ile Gly Arg Asp Met Leu Glu Arg Thr
835 840 845

Ala Arg Phe Ile Lys Asp Asn Phe Ser Glu Pro Cys Phe Leu His Asn
850 855 860

Phe Phe Asn Gln Glu Asp Tyr Val Val Gly Thr Arg Glu Gly Asp Ser
865 870 875 880

Glu Glu Ser Ser Ala Leu Pro Glu Gly Leu Glu Thr Ser Ser Gly Gly
885 890 895

Ser Asn Glu Arg Arg Val Glu Ala Arg Val Ile Tyr Gly Asp Thr Asp
900 905 910

Ser Val Phe Val Arg Phe Arg Gly Leu Thr Pro Gln Ala Leu Val Ala
915 920 925

Arg Gly Pro Ser Leu Ala His Tyr Val Thr Ala Cys Leu Phe Val Glu
930 935 940

Pro Val Lys Leu Glu Phe Glu Lys Val Phe Val Ser Leu Met Met Ile
945 950 955 960

Cys Lys Lys Arg Tyr Ile Gly Lys Val Glu Gly Ala Ser Gly Leu Ser
965 970 975

Met Lys Gly Val Asp Leu Val Arg Lys Thr Ala Cys Glu Phe Val Lys
980 985 990

Gly Val Thr Arg Asp Val Leu Ser Leu Leu Phe Glu Asp Arg Glu Val
995 1000 1005

Ser Glu Ala Ala Val Arg Leu Ser Arg Leu Ser Leu Asp Glu Val
1010 1015 1020

Lys Lys Tyr Gly Val Pro Arg Gly Phe Trp Arg Ile Leu Arg Arg
1025 1030 1035

Leu Val Gln Ala Arg Asp Asp Leu Tyr Leu His Arg Val Arg Val
1040 1045 1050

Glu Asp Leu Val Leu Ser Ser Val Leu Ser Lys Asp Ile Ser Leu
1055 1060 1065

Tyr Arg Gln Ser Asn Leu Pro His Ile Ala Val Ile Lys Arg Leu
1070 1075 1080

40

Ala Ala Arg Ser Glu Glu Leu Pro Ser Val Gly Asp Arg Val Phe
1085   1090   1095

Tyr Val Leu Thr Ala Pro Gly Val Arg Thr Ala Pro Gln Gly Ser
1100   1105   1110

Ser Asp Asn Gly Asp Ser Val Thr Ala Gly Val Val Ser Arg Ser
1115   1120   1125

Asp Ala Ile Asp Gly Thr Asp Asp Asp Ala Asp Gly Gly Gly Val
1130   1135   1140

Glu Glu Ser Asn Arg Arg Gly Gly Glu Pro Ala Lys Lys Arg Ala
1145   1150   1155

Arg Lys Pro Pro Ser Ala Val Cys Asn Tyr Glu Val Ala Glu Asp
1160   1165   1170

Pro Ser Tyr Val Arg Glu His Gly Val Pro Ile His Ala Asp Lys
1175   1180   1185

Tyr Phe Glu Gln Val Leu Lys Ala Val Thr Asn Val Leu Ser Pro
1190   1195   1200

Val Phe Pro Gly Gly Glu Thr Ala Arg Lys Asp Lys Phe Leu His
1205   1210   1215

Met Val Leu Pro Arg Arg Leu His Leu Glu Pro Ala Phe Leu Pro
1220   1225   1230

Tyr Ser Val Lys Ala His Glu Cys Cys
1235   1240

<210> 14
<211> 1238
<212> PRT
<213> herpes simplex

<400> 14

Met Phe Cys Ala Ala Gly Gly Pro Thr Ser Pro Gly Gly Lys Ser Ala
1   5   10   15

Ala Arg Ala Ala Ser Gly Phe Phe Ala Pro His Asn Pro Arg Gly Ala
          20   25   30

Thr Gln Thr Ala Pro Pro Pro Cys Arg Arg Gln Asn Phe Tyr Asn Pro
          35   40   45

His Leu Ala Gln Thr Gly Thr Gln Pro Lys Ala Pro Gly Pro Ala Gln
          50   55   60

Arg His Thr Tyr Tyr Ser Glu Cys Asp Glu Phe Arg Phe Ile Ala Pro
65   70   75   80

Arg Ser Leu Asp Glu Asp Ala Pro Ala Glu Gln Arg Thr Gly Val His
          85   90   95

Asp Gly Arg Leu Arg Arg Ala Pro Lys Val Tyr Cys Gly Gly Asp Glu
          100   105   110

Arg Asp Val Leu Arg Val Gly Pro Glu Gly Phe Trp Pro Arg Arg Leu

Arg Leu Trp Gly Gly Ala Asp His Ala Pro Lys Gly Phe Asp Pro Thr
    130   135   140

Val Thr Val Phe His Val Tyr Asp Ile Leu Glu His Val Glu His Ala
145   150   155   160

Tyr Ser Met Arg Ala Ala Gln Leu His Glu Arg Phe Met Asp Ala Ile
                165   170   175

Thr Pro Ala Gly Thr Val Ile Thr Leu Leu Gly Leu Thr Pro Glu Gly
                180   185   190

His Arg Val Ala Val His Val Tyr Gly Thr Arg Gln Tyr Phe Tyr Met
            195   200   205

Asn Lys Ala Glu Val Asp Arg His Leu Gln Cys Arg Ala Pro Arg Asp
    210   215   220

Leu Cys Glu Arg Leu Ala Ala Ala Leu Arg Glu Ser Pro Gly Ala Ser
225   230   235   240

Phe Arg Gly Ile Ser Ala Asp His Phe Glu Ala Glu Val Val Glu Arg
                245   250   255

Ala Asp Val Tyr Tyr Tyr Glu Thr Arg Pro Thr Leu Tyr Tyr Arg Val
                260   265   270

Phe Val Arg Ser Gly Arg Ala Leu Ala Tyr Leu Cys Asp Asn Phe Cys
        275   280   285

Pro Ala Ile Arg Lys Tyr Glu Gly Gly Val Asp Ala Thr Thr Arg Phe
    290   295   300

Ile Leu Asp Asn Pro Gly Phe Val Thr Phe Gly Trp Tyr Arg Leu Lys
305   310   315   320

Pro Gly Arg Gly Asn Ala Pro Ala Gln Pro Arg Pro Pro Thr Ala Phe
                325   330   335

Gly Thr Ser Ser Asp Val Glu Phe Asn Cys Thr Ala Asp Asn Leu Ala
            340   345   350

Val Glu Gly Ala Met Cys Asp Leu Pro Ala Tyr Lys Leu Met Cys Phe
        355   360   365

Asp Ile Glu Cys Lys Ala Gly Gly Glu Asp Glu Leu Ala Phe Pro Val
    370   375   380

Ala Glu Arg Pro Glu Asp Leu Val Ile Gln Ile Ser Cys Leu Leu Tyr
385   390   395   400

Asp Leu Ser Thr Thr Ala Leu Glu His Ile Leu Leu Phe Ser Leu Gly
            405   410   415

Ser Cys Asp Leu Pro Glu Ser His Leu Ser Asp Leu Ala Ser Arg Gly
            420   425   430

Leu Pro Ala Pro Val Val Leu Glu Phe Asp Ser Glu Phe Glu Met Leu
    435   440   445

42

Leu Ala Phe Met Thr Phe Val Lys Gln Tyr Gly Pro Glu Phe Val Thr
450   455   460

Gly Tyr Asn Ile Ile Asn Phe Asp Trp Pro Phe Val Leu Thr Lys Leu
465   470   475   480

Thr Glu Ile Tyr Lys Val Pro Leu Asp Gly Tyr Gly Arg Met Asn Gly
                485   490   495

Arg Gly Val Phe Arg Val Trp Asp Ile Gly Gln Ser His Phe Gln Lys
            500   505   510

Arg Ser Lys Ile Lys Val Asn Gly Met Val Asn Ile Asp Met Tyr Gly
        515   520   525

Ile Ile Thr Asp Lys Val Lys Leu Ser Ser Tyr Lys Leu Asn Ala Val
    530   535   540

Ala Glu Ala Val Leu Lys Asp Lys Lys Lys Asp Leu Ser Tyr Arg Asp
545   550   555   560

Ile Pro Ala Tyr Tyr Ala Ser Gly Pro Ala Gln Arg Gly Val Ile Gly
                565   570   575

Glu Tyr Cys Val Gln Asp Ser Leu Leu Val Gly Gln Leu Phe Phe Lys
            580   585   590

Phe Leu Pro His Leu Glu Leu Ser Ala Val Ala Arg Leu Ala Gly Ile
        595   600   605

Asn Ile Thr Arg Thr Ile Tyr Asp Gly Gln Gln Ile Arg Val Phe Thr
    610   615   620

Cys Leu Leu Arg Leu Ala Gly Gln Lys Gly Phe Ile Leu Pro Asp Thr
625   630   635   640

Gln Gly Arg Phe Arg Gly Leu Asp Lys Glu Ala Pro Lys Arg Pro Ala
            645   650   655

Val Pro Arg Gly Glu Gly Glu Arg Pro Gly Asp Gly Asn Gly Asp Glu
            660   665   670

Asp Lys Asp Asp Asp Glu Asp Glu Asp Gly Asp Glu Arg Glu Glu Val
        675   680   685

Ala Arg Glu Thr Gly Gly Arg His Val Gly Tyr Gln Gly Ala Arg Val
    690   695   700

Leu Asp Pro Thr Ser Gly Phe His Val Asp Pro Val Val Val Phe Asp
705   710   715   720

Phe Ala Ser Leu Tyr Pro Ser Ile Ile Gln Ala His Asn Leu Cys Phe
            725   730   735

Ser Thr Leu Ser Leu Arg Pro Glu Ala Val Ala His Leu Glu Ala Asp
            740   745   750

Arg Asp Tyr Leu Glu Ile Glu Val Gly Gly Arg Arg Leu Phe Phe Val
        755   760   765

Lys Ala His Val Arg Glu Ser Leu Leu Ser Ile Leu Leu Arg Asp Trp
770   775   780

43

```
Leu Ala Met Arg Lys Gln Ile Arg Ser Arg Ile Pro Gln Ser Thr Pro
785             790             795             800

Glu Glu Ala Val Leu Leu Asp Lys Gln Gln Ala Ala Ile Lys Val Val
            805             810             815

Cys Asn Ser Val Tyr Gly Phe Thr Gly Val Gln His Gly Leu Leu Pro
            820             825             830

Cys Leu His Val Ala Ala Thr Val Thr Thr Ile Gly Arg Glu Met Leu
        835             840             845

Leu Ala Thr Arg Ala Tyr Val His Ala Arg Trp Ala Glu Phe Asp Gln
    850             855             860

Leu Leu Ala Asp Phe Pro Glu Ala Ala Gly Met Arg Ala Pro Gly Pro
865             870             875             880

Tyr Ser Met Arg Ile Ile Tyr Gly Asp Thr Asp Ser Ile Phe Val Leu
            885             890             895

Cys Arg Gly Leu Thr Ala Ala Gly Leu Val Ala Met Gly Asp Lys Met
            900             905             910

Ala Ser His Ile Ser Arg Ala Leu Phe Leu Pro Pro Ile Lys Leu Glu
    915             920             925

Cys Glu Lys Thr Phe Thr Lys Leu Leu Leu Ile Ala Lys Lys Lys Tyr
    930             935             940

Ile Gly Val Ile Cys Gly Gly Lys Met Leu Ile Lys Gly Val Asp Leu
945             950             955             960

Val Arg Lys Asn Asn Cys Ala Phe Ile Asn Arg Thr Ser Arg Ala Leu
            965             970             975

Val Asp Leu Leu Phe Tyr Asp Asp Thr Val Ser Gly Ala Ala Ala Ala
            980             985             990

Leu Ala Glu Arg Pro Ala Glu Glu  Trp Leu Ala Arg Pro  Leu Pro Glu
    995             1000            1005

Gly Leu  Gln Ala Phe Gly Ala  Val Leu Val Asp Ala  His Arg Arg
    1010            1015            1020

Ile Thr  Asp Pro Glu Arg Asp  Ile Gln Asp Phe Val  Leu Thr Ala
    1025            1030            1035

Glu Leu  Ser Arg His Pro Arg  Ala Tyr Thr Asn Lys  Arg Leu Ala
    1040            1045            1050

His Leu  Thr Val Tyr Tyr Lys  Leu Met Ala Arg Arg  Ala Gln Val
    1055            1060            1065

Pro Ser  Ile Lys Asp Arg Ile  Pro Tyr Val Ile Val  Ala Gln Thr
    1070            1075            1080

Arg Glu  Val Glu Glu Thr Val  Ala Arg Leu Ala Ala  Leu Arg Glu
    1085            1090            1095

Leu Asp  Ala Ala Ala Pro Gly  Asp Glu Pro Ala Pro  Pro Ala Ala
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44

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      1100                    1105                    1110

Leu Pro  Ser Pro Ala Lys Arg  Pro Arg Glu Thr Pro  Ser His Ala
    1115                  1120              1125

Asp Pro  Pro Gly Gly Ala Ser  Lys Pro Arg Lys Leu  Leu Val Ser
    1130                  1135              1140

Glu Leu  Ala Glu Asp Pro Gly  Tyr Ala Ile Ala Arg  Gly Val Pro
    1145                  1150              1155

Leu Asn  Thr Asp Tyr Tyr Phe  Ser His Leu Leu Gly  Ala Ala Cys
    1160                  1165              1170

Val Thr  Phe Lys Ala Leu Phe  Gly Asn Asn Ala Lys  Ile Thr Glu
    1175                  1180              1185

Ser Leu  Leu Lys Arg Phe Ile  Pro Glu Thr Trp His  Pro Pro Asp
    1190                  1195              1200

Asp Val  Ala Ala Arg Leu Arg  Ala Ala Gly Phe Gly  Pro Ala Gly
    1205                  1210              1215

Ala Gly  Ala Thr Ala Glu Glu  Thr Arg Arg Met Leu  His Arg Ala
    1220                  1225              1230

Phe Asp  Thr Leu Ala
    1235

<210>  15
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<212>  PRT
<213>  herpes simplex

<400>  15

Met Phe Cys Ala Ala Gly Gly Pro Ala Ser Pro Gly Gly Lys Ser Ala
1                   5                   10                  15

Ala Arg Ala Ala Ser Gly Phe Phe Ala Pro His Asn Pro Arg Gly Ala
            20                  25                  30

Thr Gln Thr Ala Pro Pro Pro Cys Arg Arg Gln Asn Phe Tyr Asn Pro
            35                  40                  45

His Leu Ala Gln Thr Gly Thr Gln Pro Lys Ala Pro Gly Pro Ala Gln
    50                  55                  60

Arg His Thr Tyr Tyr Ser Glu Cys Asp Glu Phe Arg Phe Ile Ala Pro
65                  70                  75                  80

Arg Ser Leu Asp Glu Asp Ala Pro Ala Glu Gln Arg Thr Gly Val His
            85              (       90                  95

Asp Gly Arg Leu Arg Arg Ala Pro Lys Val Tyr Cys Gly Gly Asp Glu
            100                 105                 110

Arg Asp Val Leu Arg Val Gly Pro Glu Gly Phe Trp Pro Arg Arg Leu
            115                 120                 125

Arg Leu Trp Gly Gly Ala Asp His Ala Pro Glu Gly Phe Asp Pro Thr
    130                 135                 140
```

45

Val Thr Val Phe His Val Tyr Asp Ile Leu Glu His Val Glu His Ala
145   150   155   160

Tyr Ser Met Arg Ala Ala Gln Leu His Glu Arg Phe Met Asp Ala Ile
                165   170   175

Thr Pro Ala Gly Thr Val Ile Thr Leu Leu Gly Leu Thr Pro Glu Gly
                180   185   190

His Arg Val Ala Val His Val Tyr Gly Thr Arg Gln Tyr Phe Tyr Met
            195   200   205

Asn Lys Ala Glu Val Asp Arg His Leu Gln Cys Arg Ala Pro Arg Asp
    210   215   220

Leu Cys Glu Arg Leu Ala Ala Ala Leu Arg Glu Ser Pro Gly Ala Ser
225   230   235   240

Phe Arg Gly Ile Ser Ala Asp His Phe Glu Ala Glu Val Val Glu Arg
                245   250   255

Ala Asp Val Tyr Tyr Tyr Glu Thr Arg Pro Thr Leu Tyr Tyr Arg Val
                260   265   270

Phe Val Arg Ser Gly Arg Ala Leu Ala Tyr Leu Cys Asp Asn Phe Cys
        275   280   285

Pro Ala Ile Arg Lys Tyr Glu Gly Gly Val Asp Ala Thr Thr Arg Phe
    290   295   300

Ile Leu Asp Asn Pro Gly Phe Val Thr Phe Gly Trp Tyr Arg Leu Lys
305   310   315   320

Pro Gly Arg Gly Asn Ala Pro Ala Gln Pro Arg Pro Pro Thr Ala Phe
                325   330   335

Gly Thr Ser Ser Asp Val Glu Phe Asn Cys Thr Ala Asp Asn Leu Ala
            340   345   350

Val Glu Gly Ala Met Cys Asp Leu Pro Ala Tyr Lys Leu Met Cys Phe
        355   360   365

Asp Ile Glu Cys Lys Ala Gly Gly Glu Asp Glu Leu Ala Phe Pro Val
    370   375   380

Ala Glu Arg Pro Glu Asp Leu Val Ile Gln Ile Ser Cys Leu Leu Tyr
385   390   395   400

Asp Leu Ser Thr Thr Ala Leu Glu His Ile Leu Leu Phe Ser Leu Gly
                405   410   415

Ser Cys Asp Leu Pro Glu Ser His Leu Ser Asp Leu Ala Ser Arg Gly
            420   425   430

Leu Pro Ala Pro Val Val Leu Glu Phe Asp Ser Glu Phe Glu Met Leu
            435   440   445

Leu Ala Phe Met Thr Phe Val Lys Gln Tyr Gly Pro Glu Phe Val Thr
    450   455   460

Gly Tyr Asn Ile Ile Asn Phe Asp Trp Pro Phe Val Leu Thr Lys Leu

46

Thr Glu Ile Tyr Lys Val Pro Leu Asp Gly Tyr Gly Arg Met Asn Gly
              485   490   495

Arg Gly Val Phe Arg Val Trp Asp Ile Gly Gln Ser His Phe Gln Lys
              500   505   510

Arg Ser Lys Ile Lys Val Asn Gly Met Val Asn Ile Asp Met Tyr Gly
         515   520   525

Ile Ile Thr Asp Lys Val Lys Leu Ser Ser Tyr Lys Leu Asn Ala Val
         530   535   540

Ala Glu Ala Val Leu Lys Asp Lys Lys Lys Asp Leu Ser Tyr Arg Asp
545   550   555   560

Ile Pro Ala Tyr Tyr Ala Ser Gly Pro Ala Gln Arg Gly Val Ile Gly
              565   570   575

Glu Tyr Cys Val Gln Asp Ser Leu Leu Val Gly Gln Leu Phe Phe Lys
              580   585   590

Phe Leu Pro His Leu Glu Leu Ser Ala Val Ala Arg Leu Ala Gly Ile
         595   600   605

Asn Ile Thr Arg Thr Ile Tyr Asp Gly Gln Gln Ile Arg Val Phe Thr
         610   615   620

Cys Leu Leu Arg Leu Ala Gly Gln Lys Gly Phe Ile Leu Pro Asp Thr
625   630   635   640

Gln Gly Arg Phe Arg Gly Leu Asp Lys Glu Ala Pro Lys Arg Pro Ala
              645   650   655

Val Pro Arg Gly Glu Gly Glu Arg Pro Gly Asp Gly Asn Gly Asp Glu
              660   665   670

Asp Lys Asp Asp Asp Glu Asp Gly Asp Glu Asp Gly Asp Glu Arg Glu
         675   680   685

Glu Val Ala Arg Glu Thr Gly Gly Arg His Val Gly Tyr Gln Gly Ala
         690   695   700

Arg Val Leu Asp Pro Thr Ser Gly Phe His Val Asp Pro Val Val Val
705   710   715   720

Phe Asp Phe Ala Ser Leu Tyr Pro Ser Ile Ile Gln Ala His Asn Leu
              725   730   735

Cys Phe Ser Thr Leu Ser Leu Arg Pro Glu Ala Val Ala His Leu Glu
              740   745   750

Ala Asp Arg Asp Tyr Leu Glu Ile Glu Val Gly Gly Arg Arg Leu Phe
         755   760   765

Phe Val Lys Ala His Val Arg Glu Ser Leu Leu Ser Ile Leu Leu Arg
         770   775   780

Asp Trp Leu Ala Met Arg Lys Gln Ile Arg Ser Arg Ile Pro Gln Ser
785   790   795   800

47

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Pro Pro Glu Glu Ala Val Leu Leu Asp Lys Gln Gln Ala Ala Ile Lys
            805                     810                 815

Val Val Cys Asn Ser Val Tyr Gly Phe Thr Gly Val Gln His Gly Leu
            820                 825                 830

Leu Pro Cys Leu His Val Ala Ala Thr Val Thr Thr Ile Gly Arg Glu
            835                 840                 845

Met Leu Leu Ala Thr Arg Ala Tyr Val His Ala Arg Trp Ala Glu Phe
    850                 855                 860

Asp Gln Leu Leu Ala Asp Phe Pro Glu Ala Ala Gly Met Arg Ala Pro
865                 870                 875                 880

Gly Pro Tyr Ser Met Arg Ile Ile Tyr Gly Asp Thr Asp Ser Ile Phe
            885                 890                 895

Val Leu Cys Arg Gly Leu Thr Ala Ala Gly Leu Val Ala Met Gly Asp
            900                 905                 910

Lys Met Ala Ser His Ile Ser Arg Ala Leu Phe Leu Pro Pro Ile Lys
    915                 920                 925

Leu Glu Cys Glu Lys Thr Phe Thr Lys Leu Leu Leu Ile Ala Lys Lys
    930                 935                 940

Lys Tyr Ile Gly Val Ile Cys Gly Gly Lys Met Leu Ile Lys Gly Val
945                 950                 955                 960

Asp Leu Val Arg Lys Asn Asn Cys Ala Phe Ile Asn Arg Thr Ser Arg
            965                 970                 975

Ala Leu Val Asp Leu Leu Phe Tyr Asp Asp Thr Val Ser Gly Ala Ala
            980                 985                 990

Ala Ala Leu Ala Glu Arg Pro Ala  Glu Glu Trp Leu Ala  Arg Pro Leu
        995                 1000             1005

Pro Glu  Gly Leu Gln Ala Phe  Gly Ala Val Leu Val  Asp Ala His
    1010             1015             1020

Arg Arg  Ile Thr Asp Pro Glu  Arg Asp Ile Gln Asp  Phe Val Leu
    1025             1030             1035

Thr Ala  Glu Leu Ser Arg His  Pro Arg Ala Tyr Thr  Asn Lys Arg
    1040             1045             1050

Leu Ala  His Leu Thr Val Tyr  Tyr Lys Leu Met Ala  Arg Arg Ala
    1055             1060             1065

Gln Val  Pro Ser Ile Lys Asp  Arg Ile Pro Tyr Val  Ile Val Ala
    1070             1075             1080

Gln Thr  Arg Glu Val Glu Glu  Thr Val Ala Arg Leu  Ala Ala Leu
    1085             1090             1095

Arg Glu  Leu Asp Ala Ala Ala  Pro Gly Asp Glu Pro  Ala Pro Pro
    1100             1105             1110

Ala Ala  Leu Pro Ser Pro Ala  Lys Arg Pro Arg Glu  Thr Pro Ser
    1115             1120             1125
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48

His Ala Asp Pro Pro Gly Gly Ala Ser Lys Pro Arg Lys Leu Leu
    1130   1135   1140

Val Ser Glu Leu Ala Glu Asp Pro Gly Tyr Ala Ile Ala Arg Gly
    1145   1150   1155

Val Pro Leu Asn Thr Asp Tyr Tyr Phe Ser His Leu Leu Gly Ala
    1160   1165   1170

Ala Cys Val Thr Phe Lys Ala Leu Phe Gly Asn Asn Ala Lys Ile
    1175   1180   1185

Thr Glu Ser Leu Leu Lys Arg Phe Ile Pro Glu Thr Trp His Pro
    1190   1195   1200

Pro Asp Asp Val Ala Ala Arg Leu Arg Ala Ala Gly Phe Gly Pro
    1205   1210   1215

Ala Gly Ala Gly Ala Thr Ala Glu Glu Thr Arg Arg Met Leu His
    1220   1225   1230

Arg Ala Phe Asp Thr Leu Ala
    1235   1240

<210> 16
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<212> PRT
<213> herpes simplex

<400> 16

Met Phe Ser Gly Gly Gly Gly Pro Leu Ser Pro Gly Gly Lys Ser Ala
1   5   10   15

Ala Arg Ala Ala Ser Gly Phe Phe Ala Pro Ala Gly Pro Arg Gly Ala
        20   25   30

Gly Arg Gly Pro Pro Pro Cys Leu Arg Gln Asn Phe Tyr Asn Pro Tyr
        35   40   45

Leu Ala Pro Val Gly Thr Gln Gln Lys Pro Thr Gly Pro Thr Gln Arg
    50   55   60

His Thr Tyr Tyr Ser Glu Cys Asp Glu Phe Arg Phe Ile Ala Pro Arg
65   70   75   80

Val Leu Asp Glu Asp Ala Pro Pro Glu Lys Arg Ala Gly Val His Asp
            85   90   95

Gly His Leu Lys Arg Ala Pro Lys Val Tyr Cys Gly Gly Asp Glu Arg
        100   105   110

Asp Val Leu Arg Val Gly Ser Gly Gly Phe Trp Pro Arg Arg Ser Arg
        115   120   125

Leu Trp Gly Gly Val Asp His Ala Pro Ala Gly Phe Asn Pro Thr Val
    130   135   140

Thr Val Phe His Val Tyr Asp Ile Leu Glu Asn Val Glu His Ala Tyr
145   150   155   160

49

Gly Met Arg Ala Ala Gln Phe His Ala Arg Phe Met Asp Ala Ile Thr
         165   170   175

Pro Thr Gly Thr Val Ile Thr Leu Leu Gly Leu Thr Pro Glu Gly His
         180   185   190

Arg Val Ala Val His Val Tyr Gly Thr Arg Gln Tyr Phe Tyr Met Asn
         195   200   205

Lys Glu Glu Val Asp Arg His Leu Gln Cys Arg Ala Pro Arg Asp Leu
         210   215   220

Cys Glu Arg Met Ala Ala Ala Leu Arg Glu Ser Pro Gly Ala Ser Phe
225   230   235   240

Arg Gly Ile Ser Ala Asp His Phe Glu Ala Glu Val Val Glu Arg Thr
         245   250   255

Asp Val Tyr Tyr Tyr Glu Thr Arg Pro Ala Leu Phe Tyr Arg Val Tyr
         260   265   270

Val Arg Ser Gly Arg Val Leu Ser Tyr Leu Cys Asp Asn Phe Cys Pro
         275   280   285

Ala Ile Lys Lys Tyr Glu Gly Gly Val Asp Ala Thr Thr Arg Phe Ile
         290   295   300

Leu Asp Asn Pro Gly Phe Val Thr Phe Gly Trp Tyr Arg Leu Lys Pro
305   310   315   320

Gly Arg Asn Asn Thr Leu Ala Gln Pro Arg Ala Pro Met Ala Phe Gly
         325   330   335

Thr Ser Ser Asp Val Glu Phe Asn Cys Thr Ala Asp Asn Leu Ala Ile
         340   345   350

Glu Gly Gly Met Ser Asp Leu Pro Ala Tyr Lys Leu Met Cys Phe Asp
         355   360   365

Ile Glu Cys Lys Ala Gly Gly Glu Asp Glu Leu Ala Phe Pro Val Ala
         370   375   380

Gly His Pro Glu Asp Leu Val Ile Gln Ile Ser Cys Leu Leu Tyr Asp
385   390   395   400

Leu Ser Thr Thr Ala Leu Glu His Val Leu Leu Phe Ser Leu Gly Ser
         405   410   415

Cys Asp Leu Pro Glu Ser His Leu Asn Glu Leu Ala Ala Arg Gly Leu
         420   425   430

Pro Thr Pro Val Val Leu Glu Phe Asp Ser Glu Phe Glu Met Leu Leu
         435   440   445

Ala Phe Met Thr Leu Val Lys Gln Tyr Gly Pro Glu Phe Val Thr Gly
         450   455   460

Tyr Asn Ile Ile Asn Phe Asp Trp Pro Phe Leu Leu Ala Lys Leu Thr
465   470   475   480

Asp Ile Tyr Lys Val Pro Leu Asp Gly Tyr Gly Arg Met Asn Gly Arg
         485   490   495

50

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Gly Val Phe Arg Val Trp Asp Ile Gly Gln Ser His Phe Gln Lys Arg
        500                 505                 510

Ser Lys Ile Lys Val Asn Gly Met Val Asn Ile Asp Met Tyr Gly Ile
        515             520                 525

Ile Thr Asp Lys Ile Lys Leu Ser Ser Tyr Lys Leu Asn Ala Val Ala
    530             535                 540

Glu Ala Val Leu Lys Asp Lys Lys Lys Asp Leu Ser Tyr Arg Asp Ile
545             550                 555                 560

Pro Ala Tyr Tyr Ala Ala Gly Pro Ala Gln Arg Gly Val Ile Gly Glu
            565                 570                 575

Tyr Cys Ile Gln Asp Ser Leu Leu Val Gly Gln Leu Phe Phe Lys Phe
        580                 585                 590

Leu Pro His Leu Glu Leu Ser Ala Val Ala Arg Leu Ala Gly Ile Asn
        595                 600                 605

Ile Thr Arg Thr Ile Tyr Asp Gly Gln Gln Ile Arg Val Phe Thr Cys
    610                 615                 620

Leu Leu Arg Leu Ala Asp Gln Lys Gly Phe Ile Leu Pro Asp Thr Gln
625                 630                 635                 640

Gly Arg Phe Arg Gly Ala Gly Gly Glu Ala Pro Lys Arg Pro Ala Ala
            645                 650                 655

Ala Arg Glu Asp Glu Glu Arg Pro Glu Glu Glu Gly Glu Asp Glu Asp
            660                 665                 670

Glu Arg Glu Glu Gly Gly Gly Glu Arg Glu Pro Glu Gly Ala Arg Glu
            675                 680                 685

Thr Ala Gly Arg His Val Gly Tyr Gln Gly Ala Arg Val Leu Asp Pro
    690                 695                 700

Thr Ser Gly Phe His Val Asn Pro Val Val Val Phe Asp Phe Ala Ser
705                 710                 715                 720

Leu Tyr Pro Ser Ile Ile Gln Ala His Asn Leu Cys Phe Ser Thr Leu
                725                 730                 735

Ser Leu Arg Ala Asp Ala Val Ala His Leu Glu Ala Gly Lys Asp Tyr
            740                 745                 750

Leu Glu Ile Glu Val Gly Gly Arg Leu Phe Phe Val Lys Ala His
        755                 760                 765

Val Arg Glu Ser Leu Leu Ser Ile Leu Leu Arg Asp Trp Leu Ala Met
    770                 775                 780

Arg Lys Gln Ile Arg Ser Arg Ile Pro Gln Ser Ser Pro Glu Glu Ala
785                 790                 795                 800

Val Leu Leu Asp Lys Gln Gln Ala Ala Ile Lys Val Val Cys Asn Ser
                805                 810                 815

Val Tyr Gly Phe Thr Gly Val Gln His Gly Leu Leu Pro Cys Leu His
```

51

Val Ala Ala Thr Val Thr Thr Ile Gly Arg Glu Met Leu Leu Ala Thr
        835   840   845

Arg Glu Tyr Val His Ala Arg Trp Ala Ala Phe Glu Gln Leu Leu Ala
        850   855   860

Asp Phe Pro Glu Ala Ala Asp Met Arg Ala Pro Gly Pro Tyr Ser Met
865   870   875   880

Arg Ile Ile Tyr Gly Asp Thr Asp Ser Ile Phe Val Leu Cys Arg Gly
                885   890   895

Leu Thr Ala Ala Gly Leu Thr Ala Met Gly Asp Lys Met Ala Ser His
                900   905   910

Ile Ser Arg Ala Leu Phe Leu Pro Pro Ile Lys Leu Glu Cys Glu Lys
        915   920   925

Thr Phe Thr Lys Leu Leu Leu Ile Ala Lys Lys Lys Tyr Ile Gly Val
        930   935   940

Ile Tyr Gly Gly Lys Met Leu Ile Lys Gly Val Asp Leu Val Arg Lys
945   950   955   960

Asn Asn Cys Ala Phe Ile Asn Arg Thr Ser Arg Ala Leu Val Asp Leu
                965   970   975

Leu Phe Tyr Asp Asp Thr Val Ser Gly Ala Ala Ala Ala Leu Ala Glu
                980   985   990

Arg Pro Ala Glu Glu Trp Leu Ala Arg Pro Leu Pro Glu Gly Leu Gln
        995   1000   1005

Ala Phe Gly Ala Val Leu Val Asp Ala His Arg Arg Ile Thr Asp
        1010   1015   1020

Pro Glu Arg Asp Ile Gln Asp Phe Val Leu Thr Ala Glu Leu Ser
        1025   1030   1035

Arg His Pro Arg Ala Tyr Thr Asn Lys Arg Leu Ala His Leu Thr
        1040   1045   1050

Val Tyr Tyr Lys Leu Met Ala Arg Arg Ala Gln Val Pro Ser Ile
        1055   1060   1065

Lys Asp Arg Ile Pro Tyr Val Ile Val Ala Gln Thr Arg Glu Val
        1070   1075   1080

Glu Glu Thr Val Ala Arg Leu Ala Ala Leu Arg Glu Leu Asp Ala
        1085   1090   1095

Ala Ala Pro Gly Asp Glu Pro Ala Pro Pro Ala Ala Leu Pro Ser
        1100   1105   1110

Pro Ala Lys Arg Pro Arg Glu Thr Pro Ser His Ala Asp Pro Pro
        1115   1120   1125

Gly Gly Ala Ser Lys Pro Arg Lys Leu Leu Val Ser Glu Leu Ala
        1130   1135   1140

Glu Asp Pro Ala Tyr Ala Ile Ala His Gly Val Ala Leu Asn Thr
    1145   1150   1155

Asp Tyr Tyr Phe Ser His Leu Leu Gly Ala Ala Cys Val Thr Phe
    1160   1165   1170

Lys Ala Leu Phe Gly Asn Asn Ala Lys Ile Thr Glu Ser Leu Leu
    1175   1180   1185

Lys Arg Phe Ile Pro Glu Val Trp His Pro Pro Asp Asp Val Ala
    1190   1195   1200

Ala Arg Leu Arg Ala Ala Gly Phe Gly Ala Val Gly Ala Gly Ala
    1205   1210   1215

Thr Ala Glu Glu Thr Arg Arg Met Leu His Arg Ala Phe Asp Thr
    1220   1225   1230

Leu Ala
    1235

<210> 17
<211> 1235
<212> PRT
<213> herpes simplex

<400> 17

Met Phe Ser Gly Gly Gly Gly Pro Leu Ser Pro Gly Gly Lys Ser Ala
1   5   10   15

Ala Arg Ala Ala Ser Gly Phe Phe Ala Pro Ala Gly Pro Arg Gly Ala
            20   25   30

Gly Arg Gly Pro Pro Pro Cys Leu Arg Gln Asn Phe Tyr Asn Pro Tyr
        35   40   45

Leu Ala Pro Val Gly Thr Gln Gln Lys Pro Thr Gly Pro Thr Gln Arg
    50   55   60

His Thr Tyr Tyr Ser Glu Cys Asp Glu Phe Arg Phe Ile Ala Pro Arg
65   70   75   80

Val Leu Asp Glu Asp Ala Pro Pro Glu Lys Arg Ala Gly Val His Asp
            85   90   95

Gly His Leu Lys Arg Ala Pro Lys Val Tyr Cys Gly Gly Asp Glu Arg
            100   105   110

Asp Val Leu Arg Val Gly Ser Gly Gly Phe Trp Pro Arg Arg Ser Arg
            115   120   125

Leu Trp Gly Gly Val Asp His Ala Pro Ala Gly Phe Asn Pro Thr Val
    130   135   140

Thr Val Phe His Val Tyr Asp Ile Leu Glu Asn Val Glu His Ala Tyr
145   150   155   160

Gly Met Arg Ala Ala Gln Phe His Ala Arg Phe Met Asp Ala Ile Thr
            165   170   175

Pro Thr Gly Thr Val Ile Thr Leu Leu Gly Leu Thr Pro Glu Gly His

53

Arg Val Ala Val His Val Tyr Gly Thr Arg Gln Tyr Phe Tyr Met Asn
    195   200   205

Lys Glu Glu Val Asp Arg His Leu Gln Cys Arg Ala Pro Arg Asp Leu
210   215   220

Cys Glu Arg Met Ala Ala Ala Leu Arg Glu Ser Pro Gly Ala Ser Phe
225   230   235   240

Arg Gly Ile Ser Ala Asp His Phe Glu Ala Glu Val Val Glu Arg Thr
    245   250   255

Asp Val Tyr Tyr Tyr Glu Thr Arg Pro Ala Leu Phe Tyr Arg Val Tyr
    260   265   270

Val Arg Ser Gly Arg Val Leu Ser Tyr Leu Cys Asp Asn Phe Cys Pro
    275   280   285

Ala Ile Lys Lys Tyr Glu Gly Gly Val Asp Ala Thr Thr Arg Phe Ile
    290   295   300

Leu Asp Asn Pro Gly Phe Val Thr Phe Gly Trp Tyr Arg Leu Lys Pro
305   310   315   320

Gly Arg Asn Asn Thr Leu Ala Gln Pro Arg Ala Pro Met Ala Phe Gly
    325   330   335

Thr Ser Ser Asp Val Glu Phe Asn Cys Thr Ala Asp Asn Leu Ala Ile
    340   345   350

Glu Gly Gly Met Ser Asp Leu Pro Ala Tyr Lys Leu Met Cys Phe Asp
    355   360   365

Ile Glu Cys Lys Ala Gly Gly Glu Asp Glu Leu Ala Phe Pro Val Ala
    370   375   380

Gly His Pro Glu Asp Leu Val Ile Gln Ile Ser Cys Leu Leu Tyr Asp
385   390   395   400

Leu Ser Thr Thr Ala Leu Glu His Val Leu Leu Phe Ser Leu Gly Ser
    405   410   415

Cys Asp Leu Pro Glu Ser His Leu Asn Glu Leu Ala Ala Arg Gly Leu
    420   425   430

Pro Thr Pro Val Val Leu Glu Phe Asp Ser Glu Phe Glu Met Leu Leu
    435   440   445

Ala Phe Met Thr Leu Val Lys Gln Tyr Gly Pro Glu Phe Val Thr Gly
    450   455   460

Tyr Asn Ile Ile Asn Phe Asp Trp Pro Phe Leu Leu Ala Lys Leu Thr
465   470   475   480

Asp Ile Tyr Lys Val Pro Leu Asp Gly Tyr Gly Arg Met Asn Gly Arg
    485   490   495

Gly Val Phe Arg Val Trp Asp Ile Gly Gln Ser His Phe Gln Lys Arg
    500   505   510

Ser Lys Ile Lys Val Asn Gly Met Val Asn Ile Asp Met Tyr Gly Ile
        515   520   525

Ile Thr Asp Lys Ile Lys Leu Ser Ser Tyr Lys Leu Asn Ala Val Ala
        530   535   540

Glu Ala Val Leu Lys Asp Lys Lys Lys Asp Leu Ser Tyr Arg Asp Ile
545   550   555   560

Pro Ala Tyr Tyr Ala Ala Gly Pro Ala Gln Arg Gly Val Ile Gly Glu
            565   570   575

Tyr Cys Ile Gln Asp Ser Leu Leu Val Gly Gln Leu Phe Phe Lys Phe
        580   585   590

Leu Pro His Leu Glu Leu Ser Ala Val Ala Arg Leu Ala Gly Ile Asn
        595   600   605

Ile Thr Arg Thr Ile Tyr Asp Gly Gln Gln Ile Arg Val Phe Thr Cys
        610   615   620

Leu Leu Arg Leu Ala Asp Gln Lys Gly Phe Ile Leu Pro Asp Thr Gln
625   630   635   640

Gly Arg Phe Arg Gly Ala Gly Gly Glu Ala Pro Lys Arg Pro Ala Ala
            645   650   655

Ala Arg Glu Asp Glu Glu Arg Pro Glu Glu Glu Gly Glu Asp Glu Asp
            660   665   670

Glu Arg Glu Glu Gly Gly Gly Glu Arg Glu Pro Glu Gly Ala Arg Glu
        675   680   685

Thr Ala Gly Arg His Val Gly Tyr Gln Gly Ala Arg Val Leu Asp Pro
        690   695   700

Ile Ser Gly Phe His Val Asn Pro Val Val Val Phe Asp Phe Ala Ser
705   710   715   720

Leu Tyr Pro Ser Ile Ile Gln Ala His Asn Leu Cys Phe Ser Thr Leu
            725   730   735

Ser Leu Arg Ala Asp Ala Val Ala His Leu Glu Ala Gly Lys Asp Tyr
        740   745   750

Leu Glu Ile Glu Val Gly Gly Arg Arg Leu Phe Phe Val Lys Ala His
        755   760   765

Val Arg Glu Ser Leu Leu Ser Ile Leu Leu Arg Asp Trp Leu Ala Met
        770   775   780

Arg Lys Gln Ile Arg Ser Arg Ile Pro Gln Ser Ser Pro Glu Glu Ala
785   790   795   800

Val Leu Leu Asp Lys Gln Gln Ala Ala Ile Lys Val Val Cys Asn Ser
            805   810   815

Val Tyr Gly Phe Thr Gly Val Gln His Gly Leu Leu Pro Cys Leu His
        820   825   830

Val Ala Ala Thr Val Thr Thr Ile Gly Arg Glu Met Leu Leu Ala Thr
        835   840   845

55

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Arg Glu Tyr Val His Ala Arg Trp Ala Ala Phe Glu Gln Leu Leu Ala
    850                 855             860

Asp Phe Pro Glu Ala Ala Asp Met Arg Ala Pro Gly Pro Tyr Ser Met
865             870             875                     880

Arg Ile Ile Tyr Gly Asp Thr Asp Ser Ile Phe Val Leu Cys Arg Gly
            885                 890             895

Leu Thr Ala Ala Gly Leu Thr Ala Met Gly Asp Lys Met Ala Ser His
        900             905             910

Ile Ser Arg Ala Leu Phe Leu Pro Pro Ile Lys Leu Glu Cys Glu Lys
        915             920             925

Thr Phe Thr Lys Leu Leu Leu Ile Ala Lys Lys Lys Tyr Ile Gly Val
    930             935             940

Ile Tyr Gly Gly Lys Met Leu Ile Lys Gly Val Asp Leu Val Arg Lys
945             950             955                     960

Asn Asn Cys Ala Phe Ile Asn Arg Thr Ser Arg Ala Leu Val Asp Leu
            965                 970             975

Leu Phe Tyr Asp Asp Thr Val Ser Gly Ala Ala Ala Ala Leu Ala Glu
        980             985             990

Arg Pro Ala Glu Glu Trp Leu Ala  Arg Pro Leu Pro Glu  Gly Leu Gln
        995             1000             1005

Ala Phe  Gly Ala Val Leu Val  Asp Ala His Arg Arg  Ile Thr Asp
    1010             1015             1020

Pro Glu  Arg Asp Ile Gln Asp  Phe Val Leu Thr Ala  Glu Leu Ser
    1025             1030             1035

Arg His  Pro Arg Ala Tyr Thr  Asn Lys Arg Leu Ala  His Leu Thr
    1040             1045             1050

Val Tyr  Tyr Lys Leu Met Ala  Arg Arg Ala Gln Val  Pro Ser Ile
    1055             1060             1065

Lys Asp  Arg Ile Pro Tyr Val  Ile Val Ala Gln Thr  Arg Glu Val
    1070             1075             1080

Glu Glu  Thr Val Ala Arg Leu  Ala Ala Leu Arg Glu  Leu Asp Ala
    1085             1090             1095

Ala Ala  Pro Gly Asp Glu Pro  Ala Pro Pro Ala Ala  Leu Pro Ser
    1100             1105             1110

Pro Ala  Lys Arg Pro Arg Glu  Thr Pro Ser Pro Ala  Asp Pro Pro
    1115             1120             1125

Gly Gly  Ala Ser Lys Pro Arg  Lys Leu Leu Val Ser  Glu Leu Ala
    1130             1135             1140

Glu Asp  Pro Ala Tyr Ala Ile  Ala His Gly Val Ala  Leu Asn Thr
    1145             1150             1155

Asp Tyr  Tyr Phe Ser His Leu  Leu Gly Ala Ala Cys  Val Thr Phe
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56

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Lys Ala  Leu Phe Gly Asn Asn  Ala Lys Ile Thr Glu  Ser Leu Leu
    1175                    1180                    1185

Lys Arg  Phe Ile Pro Glu Val  Trp His Pro Pro Asp  Asp Val Thr
    1190                    1195                    1200

Ala Arg  Leu Arg Ala Ala Gly  Phe Gly Ala Val Gly  Ala Gly Ala
    1205                    1210                    1215

Thr Ala  Glu Glu Thr Arg Arg  Met Leu His Arg Ala  Phe Asp Thr
    1220                    1225                    1230

Leu Ala
    1235
```

```
<210>   18
<211>   1235
<212>   PRT
<213>   herpes simplex

<400>   18
```

```
Met Phe Ser Gly Gly Gly Gly Pro Leu Ser Pro Gly Gly Lys Ser Ala
1                   5                   10                  15

Ala Arg Ala Ala Ser Gly Phe Phe Ala Pro Ala Gly Pro Arg Gly Ala
            20                  25                  30

Gly Arg Gly Pro Pro Pro Cys Leu Arg Gln Asn Phe Tyr Asn Pro Tyr
        35                  40                  45

Leu Ala Pro Val Gly Thr Gln Gln Lys Pro Thr Gly Pro Thr Gln Arg
    50                  55                  60

His Thr Tyr Tyr Ser Glu Cys Asp Glu Phe Arg Phe Ile Ala Pro Arg
65                  70                  75                  80

Val Leu Asp Glu Asp Ala Pro Pro Glu Lys Arg Ala Gly Val His Asp
            85                  90                  95

Gly His Leu Lys Arg Ala Pro Lys Val Tyr Cys Gly Gly Asp Glu Arg
            100                 105                 110

Asp Val Leu Arg Val Gly Ser Gly Gly Phe Trp Pro Arg Arg Ser Arg
            115                 120                 125

Leu Trp Gly Gly Val Asp His Ala Pro Ala Gly Phe Asn Pro Thr Val
    130                 135                 140

Thr Val Phe His Val Tyr Asp Ile Leu Glu Asn Val Glu His Ala Tyr
145                 150                 155                 160

Gly Met Arg Ala Ala Gln Phe His Ala Arg Phe Met Asp Ala Ile Thr
            165                 170                 175

Pro Thr Gly Thr Val Ile Thr Leu Leu Gly Leu Thr Pro Glu Gly His
            180                 185                 190

Arg Val Ala Val His Val Tyr Gly Thr Arg Gln Tyr Phe Tyr Met Asn
        195                 200                 205
```

57

```
Lys Glu Glu Val Asp Arg His Leu Gln Cys Arg Ala Pro Arg Asp Leu
210                 215             220

Cys Glu Arg Met Ala Ala Ala Leu Arg Glu Ser Pro Gly Ala Ser Phe
225             230             235                 240

Arg Gly Ile Ser Ala Asp His Phe Glu Ala Glu Val Val Glu Arg Thr
            245             250             255

Asp Val Tyr Tyr Tyr Glu Thr Arg Pro Ala Leu Phe Tyr Arg Val Tyr
        260             265             270

Val Arg Ser Gly Arg Val Leu Ser Tyr Leu Cys Asp Asn Phe Cys Pro
    275             280             285

Ala Ile Lys Lys Tyr Glu Gly Gly Val Asp Ala Thr Thr Arg Phe Ile
    290             295             300

Leu Asp Asn Pro Gly Phe Val Thr Phe Gly Trp Tyr Arg Leu Lys Pro
305             310             315             320

Gly Arg Asn Asn Thr Leu Ala Gln Pro Arg Ala Pro Met Ala Phe Gly
            325             330             335

Thr Ser Ser Asp Val Glu Phe Asn Cys Thr Ala Asp Asn Leu Ala Ile
        340             345             350

Glu Gly Gly Met Ser Asp Leu Pro Ala Tyr Lys Leu Met Cys Phe Asp
    355             360             365

Ile Glu Cys Lys Ala Gly Gly Glu Asp Glu Leu Ala Phe Pro Val Ala
    370             375             380

Gly His Pro Glu Asp Leu Val Ile Gln Ile Ser Cys Leu Leu Tyr Asp
385             390             395             400

Leu Ser Thr Thr Ala Leu Glu His Val Leu Leu Phe Ser Leu Gly Ser
            405             410             415

Cys Asp Leu Pro Glu Ser His Leu Asn Glu Leu Ala Ala Arg Gly Leu
            420             425             430

Pro Thr Pro Val Val Leu Glu Phe Asp Ser Glu Phe Glu Met Leu Leu
        435             440             445

Ala Phe Met Thr Leu Val Lys Gln Tyr Gly Pro Glu Phe Val Thr Gly
    450             455             460

Tyr Asn Ile Ile Asn Phe Asp Trp Pro Phe Leu Leu Ala Lys Leu Thr
465             470             475             480

Asp Ile Tyr Lys Val Pro Leu Asp Gly Tyr Gly Arg Met Asn Gly Arg
            485             490             495

Gly Val Phe Arg Val Trp Asp Ile Gly Gln Ser His Phe Gln Lys Arg
        500             505             510

Ser Lys Ile Lys Val Asn Gly Met Val Asn Ile Asp Met Tyr Gly Ile
    515             520             525

Ile Thr Asp Lys Ile Lys Leu Ser Ser Tyr Lys Leu Asn Ala Val Ala
```

58

Glu Ala Val Leu Lys Asp Lys Lys Lys Asp Leu Ser Tyr Arg Asp Ile
545   550   555   560

Pro Thr Tyr Tyr Ala Ala Gly Pro Ala Gln Arg Gly Val Ile Gly Glu
                565   570   575

Tyr Cys Ile Gln Asp Ser Leu Leu Val Gly Gln Leu Phe Phe Lys Phe
            580   585   590

Leu Pro His Leu Glu Leu Ser Ala Val Ala Arg Leu Ala Gly Ile Asn
        595   600   605

Ile Thr Arg Thr Ile Tyr Asp Gly Gln Gln Ile Arg Val Phe Thr Cys
    610   615   620

Leu Leu Arg Leu Ala Asp Gln Lys Gly Phe Ile Leu Pro Asp Thr Gln
625   630   635   640

Gly Arg Phe Arg Gly Ala Gly Gly Glu Ala Pro Lys Arg Pro Ala Ala
            645   650   655

Ala Arg Glu Asp Glu Glu Arg Pro Glu Glu Glu Gly Glu Asp Glu Asn
            660   665   670

Glu Arg Glu Glu Gly Gly Gly Glu Arg Glu Pro Glu Gly Ala Arg Glu
        675   680   685

Thr Ala Gly Arg His Val Gly Tyr Gln Gly Ala Arg Val Leu Asp Pro
    690   695   700

Thr Ser Gly Phe His Val Asn Pro Val Val Val Phe Asp Phe Ala Ser
705   710   715   720

Leu Tyr Pro Ser Ile Ile Gln Ala His Asn Leu Cys Phe Ser Thr Leu
            725   730   735

Ser Leu Arg Ala Asp Ala Val Ala His Leu Glu Ala Gly Lys Asp Tyr
            740   745   750

Leu Glu Ile Glu Val Gly Gly Arg Arg Leu Phe Phe Val Lys Ala His
        755   760   765

Val Arg Glu Ser Leu Leu Ser Ile Leu Leu Arg Asp Trp Leu Ala Met
    770   775   780

Arg Lys Gln Ile Arg Ser Arg Ile Pro Gln Ser Ser Pro Glu Glu Ala
785   790   795   800

Val Leu Leu Asp Lys Gln Gln Ala Ala Ile Lys Val Val Cys Asn Ser
            805   810   815

Val Tyr Gly Phe Thr Gly Val Gln His Gly Leu Leu Pro Cys Leu His
            820   825   830

Val Ala Ala Thr Val Thr Thr Ile Gly Arg Glu Met Leu Leu Ala Thr
        835   840   845

Arg Glu Tyr Val His Ala Arg Trp Ala Ala Phe Glu Gln Leu Leu Ala
    850   855   860

59

```
Asp Phe Pro Glu Ala Ala Asp Met Arg Ala Pro Gly Pro Tyr Ser Met
865             870             875             880

Arg Ile Ile Tyr Gly Asp Thr Asp Ser Ile Phe Val Leu Cys Arg Gly
            885             890             895

Leu Thr Ala Ala Gly Leu Thr Ala Val Gly Asp Lys Met Ala Ser His
        900             905             910

Ile Ser Arg Ala Leu Phe Leu Pro Pro Ile Lys Leu Glu Cys Glu Lys
        915             920             925

Thr Phe Thr Lys Leu Leu Leu Ile Ala Lys Lys Lys Tyr Ile Gly Val
    930             935             940

Ile Tyr Gly Gly Lys Met Leu Ile Lys Gly Val Asp Leu Val Arg Lys
945             950             955             960

Asn Asn Cys Ala Phe Ile Asn Arg Thr Ser Arg Ala Leu Val Asp Leu
            965             970             975

Leu Phe Tyr Asp Asp Thr Val Ser Gly Ala Ala Ala Ala Leu Ala Glu
        980             985             990

Arg Pro Ala Glu Glu Trp Leu Ala  Arg Pro Leu Pro Glu  Gly Leu Gln
    995             1000                1005

Ala Phe. Gly Ala Val Leu Val  Asp Ala His Arg Arg  Ile Thr Asp
    1010            1015            1020

Pro Glu  Arg Asp Ile Gln Asp  Phe Val Leu Thr Ala  Glu Leu Ser
    1025            1030            1035

Arg His  Pro Arg Ala Tyr Thr  Asn Lys Arg Leu Ala  His Leu Thr
    1040            1045            1050

Val Tyr  Tyr Lys Leu Met Ala  Arg Arg Ala Gln Val  Pro Ser Ile
    1055            1060            1065

Lys Asp  Arg Ile Pro Tyr Val  Ile Val Ala Gln Thr  Arg Glu Val
    1070            1075            1080

Glu Glu  Thr Val Ala Arg Leu  Ala Ala Leu Arg Glu  Leu Asp Ala
    1085            1090            1095

Ala Ala  Pro Gly Asp Glu Pro  Ala Pro Pro Ala Ala  Leu Pro Ser
    1100            1105            1110

Pro Ala  Lys Arg Pro Arg Glu  Thr Pro Ser Pro Ala  Asp Pro Pro
    1115            1120            1125

Gly Gly  Ala Ser Lys Pro Arg  Lys Leu Leu Val Ser  Glu Leu Ala
    1130            1135            1140

Glu Asp  Pro Ala Tyr Ala Ile  Ala His Gly Val Ala  Leu Asn Thr
    1145            1150            1155

Asp Tyr  Tyr Phe Ser His Leu  Leu Gly Ala Ala Cys  Val Thr Phe
    1160            1165            1170

Lys Ala  Leu Phe Gly Asn Asn  Ala Lys Ile Thr Glu  Ser Leu Leu
    1175            1180            1185
```

60

Lys Arg Phe Ile Pro Glu Val Trp His Pro Pro Asp Asp Val Ala
    1190   1195   1200

Ala Arg Leu Arg Thr Ala Gly Phe Gly Ala Val Gly Ala Gly Ala
    1205   1210   1215   '

Thr Ala Glu Glu Thr Arg Arg Met Leu His Arg Ala Phe Asp Thr
    1220   1225   1230

Leu Ala
    1235

<210>   19
<211>   1235
<212>   PRT
<213>   herpes simplex

<400>   19

Met Phe Ser Gly Gly Gly Gly Pro Leu Ser Pro Gly Gly Lys Ser Ala
1   5   10   15

Ala Arg Ala Ala Ser Gly Phe Phe Ala Pro Ala Gly Pro Arg Gly Ala
            20   25   30

Gly Arg Gly Pro Pro Pro Cys Leu Arg Gln Asn Phe Tyr Asn Pro Tyr
        35   40   45   .

Leu Ala Pro Val Gly Thr Gln Gln Lys Pro Thr Gly Pro Thr Gln Arg
    50   55   60   .

His Thr Tyr Tyr Ser Glu Cys Asp Glu Phe Arg Phe Ile Ala Pro Arg
65   70   75   80

Val Leu Asp Glu Asp Ala Pro Pro Glu Lys Arg Ala Gly Val His Asp
            85   90   95

Gly His Leu Lys Arg Ala Pro Lys Val Tyr Cys Gly Gly Asp Glu Arg
            100   105   110

Asp Val Leu Arg Val Gly Ser Gly Gly Phe Trp Pro Arg Arg Ser Arg
            115   120   125

Leu Trp Gly Gly Val Asp His Ala Pro Ala Gly Phe Asn Pro Thr Val
    130   135   140

Thr Val Phe His Val Tyr Asp Ile Leu Glu Asn Val Glu His Ala Tyr
145   150   155   160

Gly Met Arg Ala Ala Gln Phe His Ala Arg Phe Met Asp Ala Ile Thr
            165   170   175

Pro Thr Gly Thr Val Ile Thr Leu Leu Gly Leu Thr Pro Glu Gly His
            180   185   190

Arg Val Ala Val His Val Tyr Gly Thr Arg Gln Tyr Phe Tyr Met Asn
            195   200   205

Lys Glu Glu Val Asp Arg His Leu Gln Cys Arg Ala Pro Arg Asp Leu
    210   215   220

61

```
Cys Glu Arg Met Ala Ala Ala Leu Arg Glu Ser Pro Gly Ala Ser Phe
225             230             235             240

Arg Gly Ile Ser Ala Asp His Phe Glu Ala Glu Val Val Glu Arg Thr
            245             250             255

Asp Val Tyr Tyr Tyr Glu Thr Arg Pro Ala Leu Phe Tyr Arg Val Tyr
            260             265             270

Val Arg Ser Gly Arg Val Leu Ser Tyr·Leu Cys Asp Asn Phe Cys Pro
        275             280             285

Ala Ile Lys Lys Tyr Glu Gly Gly Val Asp Ala Thr Thr Arg Phe Ile
    290             295             300

Leu Asp Asn Pro Gly Phe Val Thr Phe Gly Trp Tyr Arg Leu Lys Pro
305             310             315             320

Gly Arg Asn Asn Thr Leu Ala Gln Pro Arg Ala Pro Met Ala Phe Gly
            325             330             335

Thr Ser Ser Asp Val Glu Phe Asn Cys Thr Ala Asp Asn Leu Ala Ile
        340             345             350

Glu Gly Gly Met Ser Asp Leu Pro Ala Tyr Lys Leu Met Cys Phe Asp
    355             360             365

Ile Glu Cys Lys Ala Gly Gly Glu Asp Glu Leu Ala Phe Pro Val Ala
    370             375             380

Gly His Pro Glu Asp Leu Val Ile Gln Ile Ser Cys Leu Leu Tyr Asp
385             390             395             400

Leu Ser Thr Thr Ala Leu Glu His Val Leu Leu Phe Ser Leu Gly Ser
            405             410             415

Cys Asp Leu Pro Glu Ser His Leu Asn Glu Leu Ala Ala Arg Gly Leu
        420             425             430

Pro Thr Pro Val Val Leu Glu Phe Asp Ser Glu Phe Glu Met Leu Leu
        435             440             445

Ala Phe Met Thr Leu Val Lys Gln Tyr Gly Pro Glu Phe Val Thr Gly
    450             455             460

Tyr Asn Ile Ile Asn Phe Asp Trp Pro Phe Leu Leu Ala Lys Leu Thr
465             470             475             480

Asp Ile Tyr Lys Val Pro Leu Asp Gly Tyr Gly Arg Met Asn Gly Arg
            485             490             495

Gly Val Phe Arg Val Trp Asp Ile Gly Gln Ser His Phe Gln Lys Arg
            500             505             510

Ser Lys Ile Lys Val Asn Gly Met Val Asn Ile Asp Met Tyr Gly Ile
        515             520             525

Ile Thr Asp Lys Ile Lys Leu Ser Ser Tyr Lys Leu Asn Ala Val Ala
    530             535             540

Glu Ala Val Leu Lys Asp Lys Lys Lys Asp Leu Ser Tyr Arg Asp Ile
545             550             555             560
```

62

Pro Ala Tyr Tyr Ala Ala Gly Pro Ala Gln Arg Gly Val Ile Gly Glu
                565   570   575

Tyr Cys Ile Gln Asp Ser Leu Leu Val Gly Gln Leu Phe Phe Lys Phe
            580   585   590

Leu Pro His Leu Glu Leu Ser Ala Val Ala Arg Leu Ala Gly Ile Asn
            595   600   605

Ile Thr Arg Thr Ile Tyr Asp Gly Gln Gln Ile Arg Val Phe Thr Cys
    610   615   620

Leu Leu Arg Leu Ala Asp Gln Lys Gly Phe Ile Leu Pro Asp Thr Gln
625   630   635   640

Gly Arg Phe Arg Gly Gly Gly Gly Glu Ala Pro Lys Arg Pro Ala Ala
            645   650   655

Ala Arg Glu Asp Glu Glu Arg Pro Glu Glu Gly Glu Asp Glu Asp
            660   665   670

Glu Arg Glu Glu Gly Gly Gly Glu Arg Glu Pro Glu Gly Ala Arg Glu
            675   680   685

Thr Ala Gly Arg His Val Gly Tyr Gln Gly Ala Arg Val Leu Asp Pro
    690   695   700

Thr Ser Gly Phe His Val Asn Pro Val Val Val Phe Asp Phe Ala Ser
705   710   715   720

Leu Tyr Pro Ser Ile Ile Gln Ala His Asn Leu Cys Phe Ser Thr Leu
            725   730   735

Ser Leu Arg Ala Asp Ala Val Ala His Leu Glu Ala Gly Lys Asp Tyr
            740   745   750

Leu Glu Ile Glu Val Gly Gly Arg Arg Leu Phe Phe Val Lys Ala His
            755   760   765

Val Arg Glu Ser Leu Leu Ser Ile Leu Leu Arg Asp Trp Leu Ala Met
    770   775   780

Arg Lys Gln Ile Arg Ser Arg Ile Pro Gln Ser Ser Pro Glu Glu Ala
785   790   795   800

Val Leu Leu Asp Lys Gln Gln Ala Ala Ile Lys Val Val Cys Asn Ser
            805   810   815

Val Tyr Gly Phe Thr Gly Val Gln His Gly Leu Leu Pro Cys Leu His
            820   825   830

Val Ala Ala Thr Val Thr Thr Ile Gly Arg Glu Met Leu Leu Ala Thr
            835   840   845

Arg Glu Tyr Val His Ala Arg Trp Ala Ala Phe Glu Gln Leu Leu Ala
    850   855   860

Asp Phe Pro Glu Ala Ala Asp Met Arg Ala Pro Gly Pro Tyr Ser Met
865   870   875   880

Arg Ile Ile Tyr Gly Asp Thr Asp Ser Ile Phe Val Leu Cys Arg Gly

63

Leu Thr Ala Ala Gly Leu Thr Ala Val Gly Asp Lys Met Ala Ser His
            900   905   910

Ile Ser Arg Ala Leu Phe Leu Ser Pro Ile Lys Leu Glu Cys Glu Lys
        915   920   925

Thr Phe Thr Lys Leu Leu Leu Ile Ala Lys Lys Lys Tyr Ile Gly Val
    930   935   940

Ile Tyr Gly Gly Lys Met Leu Ile Lys Gly Val Asp Leu Val Arg Lys
945   950   955   960

Asn Asn Cys Ala Phe Ile Asn Arg Thr Ser Arg Ala Leu Val Asp Leu
            965   970   975

Leu Phe Tyr Asp Asp Thr Val Ser Gly Ala Ala Ala Ala Leu Ala Glu
            980   985   990

Arg Pro Ala Glu Glu Trp Leu Ala Arg Pro Leu Pro Glu Gly Leu Gln
        995   1000   1005

Ala Phe Gly Ala Val Leu Val Asp Ala His Arg Arg Ile Thr Asp
    1010   1015   1020

Pro Glu Arg Asp Ile Gln Asp Phe Val Leu Thr Ala Glu Leu Ser
    1025   1030   1035

Arg His Pro Arg Ala Tyr Thr Asn Lys Arg Leu Ala His Leu Thr
    1040   1045   1050

Val Tyr Tyr Lys Leu Met Ala Arg Arg Ala Gln Val Pro Ser Ile
    1055   1060   1065

Lys Asp Arg Ile Pro Tyr Val Ile Val Ala Gln Thr Arg Glu Val
    1070   1075   1080

Glu Glu Thr Val Ala Arg Leu Ala Ala Leu Arg Glu Leu Asp Ala
    1085   1090   1095

Ala Ala Pro Gly Asp Glu Pro Ala Pro Pro Ala Ala Leu Pro Ser
    1100   1105   1110

Pro Ala Lys Arg Pro Arg Glu Thr Pro Leu His Ala Asp Pro Pro
    1115   1120   1125

Gly Gly Ala Ser Lys Pro Arg Lys Leu Leu Val Ser Glu Leu Ala
    1130   1135   1140

Glu Asp Pro Ala Tyr Ala Ile Ala His Gly Val Ala Leu Asn Thr
    1145   1150   1155

Asp Tyr Tyr Phe Ser His Leu Leu Gly Ala Ala Cys Val Thr Phe
    1160   1165   1170

Lys Ala Leu Phe Gly Asn Asn Ala Lys Ile Thr Glu Ser Leu Leu
    1175   1180   1185

Lys Arg Phe Ile Pro Glu Val Trp His Pro Pro Asp Asp Val Ala
    1190   1195   1200

Ala Arg Leu Arg Ala Ala Gly Phe Gly Ala Val Gly Ala Gly Ala
    1205   1210   1215

Thr Ala Glu Glu Thr Arg Arg Met Leu His Arg Ala Phe Asp Thr
    1220   1225   1230

Leu Ala
    1235